Industrial Safety: How Complacency at Industrial Facilities has Evolved as a Result of Widespread Corporate Leadership Induced Reductions in Force of Essential Critical Infrastructure Workers

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INDUSTRIAL SAFETY: HOW COMPLACENCY AT INDUSTRIAL FACILITIES HAS EVOLVED AS A RESULT OF WIDESPREAD CORPORATE LEADERSHIP INDUCED REDUCTIONS IN FORCE OF ESSENTIAL CRITICAL INFRASTRUCTURE WORKERS.

by

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Bachelor of Arts in Anthropology, University of Central Florida, 2021

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Arts
in the Department of Interdisciplinary Studies
in the College of Graduate Studies
at the University of Central Florida
Orlando, Florida

Spring Term
2024

Major Professor: Vance Geiger
ABSTRACT

With the renewal of interest in nuclear energy as a green energy source, battery plant manufacturing for electric vehicles, and semiconductor fabrication plant construction, it is necessary to address the evolution of complacency as it relates to industrial facility leadership and the widespread reduction in force of essential critical infrastructure workers. As a skilled craft person in the piping trades, with almost two decades of experience in mechanical construction, ten of those years as a nuclear worker, and as a traveling pipefitter working at chemical, refinery, and gasification plants, I am intimately aware of the behaviors, practices, and procedures inherent to these industrial facilities. This personal and professional experience, in addition to gatekeeper status, affords me access to a diverse craft base and corporate leadership. Because of this atypical positioning, I am capable of discerning variances in standard procedures and protocols, changing conditions and manpower shortfalls. Qualitative research methods, including interviews, public documentation, and information from industry organizations, such as the Nuclear Regulatory Commission, the Occupational Safety and Health Administration, and the U.S. Chemical Safety Board, are all employed to collect this information. My research addresses the industrial events that are detrimental to human security due to corporate leadership’s role in complacency, which includes its involvement in understaffing and temporary manpower practices, in tandem with human performance and escalated risk behaviors.
I would like to dedicate this work to my family and to the many brothers and sisters in the construction trades who have shown me support in pursuit of my education. Mike Perez, my brother from another mother, and fellow commiserate; Chris Driggers for being the indispensable “tool” on every job “oh yeah”; Darrell Woods for his anti-social tendencies and insight into corporate leadership. Much love and respect to my son Gabriel Kniffin for being there to take care of his sister while his stepdad and I were on the road. To my dad, Todd Nicolls, who imparted his wisdom onto my sisters Carolyn and Catherine, and myself, and for never letting us feel “less than” for being girls. To Eric Downs, my husband and travel partner. To all those who have passed on, you are not forgotten.
ACKNOWLEDGMENTS

The uniqueness of the Interdisciplinary Studies program brings with it the non-traditional methods of forming a committee for thesis work. The nature of this program can sometimes prove difficult as professors must dedicated themselves to graduate students in their own disciplines. It is with my sincerest gratitude that I wish to acknowledge and thank Dr. Vance Geiger for agreeing to chair my thesis committee and guiding me through the process. Without him, I would not have made it this far. I would also like to thank the rest of my committee: Dr. Claire Knox for being a strong female presence in my environmental policy and crisis management education; and Dr. Richard Plate for lending an ear when I needed a sounding board. Thank you all.

I would also like to acknowledge Dr. Elizabeth Smock, coordinator of Interdisciplinary Studies, for accepting me into the IDS program, as well as aiding in the arduous process of completing MA thesis track milestones.
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LIST OF ABBREVIATIONS

AFL-CIO - American Federation of Labor-Congress of Industrial Organizations
BA - Business Agent
BHI - Bartlett Nuclear Services & Industrials
CAN - Containment
CSB - Chemical Safety Board
CCW - Component Cooling Water system
ePHQ or PHQ - Electronic Personal History Questionnaire
FAC - Flow Accelerated Corrosion
FFD - Fitness-for-Duty
FME - Foreign Material Exclusion
FPL - Florida Power & Light
FR - Fire Retardant
GF - General Foreman
HEPA - High-Efficiency Particulate Absorbing filter
IAEA - International Atomic Energy Agency
ISI - In Service Inspection
JHA - Job Hazard Analysis
NANTELeL - National Academy for Nuclear Training e-Learn-ing
NEI - National Energy Institute
NRUG - National Regional Utility Group
OCB - Organizational Citizenship Behavior
OJT - on the job training

OSHA - Occupational Health and Safety Administration

PADS - Personal Access Data System

Phonetic Alphabet:

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PSL - Port St. Lucie, nuclear power plant in Florida

RIF - Reduction in Force

ROF - Reactor Oversight Framework

RP or HP - Radiological Personnel or Health Physics


TLD - Thermoluminescent dosimeter

TOSHA - Tennessee Organizational Health and Safety Administration

TPN - Turkey Point Nuclear, aka “Turkey”

USNRC or NRC - United States Nuclear Regulatory Committee
CHAPTER ONE: INTRODUCTION TO PIPEFITTERS

The following information is included for a greater understanding of what pipefitters are, what they do and where they come from. This information is also included to gain insights into how a person joins the pipefitting apprenticeship, the union, and the jobs and status of a first-year apprentice pipefitter.

What is a Pipefitter

What is a pipefitter? A pipefitter is someone who fabricates, installs, maintains, and repairs piping systems. These systems generally consist of water and chemicals, pressurized piping, usually made from carbon steel, stainless steel, or other specialty metals and materials. These systems also have components such as valves, elbows, tees, threaded pipe ends, instrumentation and tubing [not a complete list]. Pipefitters fit pipe up so that it is square and level for a welder to weld a joint or component to specifications. We also use bolting to bolt flanged joints together in a piping system. We install hangers and supports to hang piping and we connect piping to chiller units [cooling systems] and pumps to circulate the system. Pipefitters that work on copper, PCV and cast pipe, set toilets, sinks, and install medical gas, among other things, are plumbers. It is a major insult to call a pipefitter a plumber. In the North, a plumber is called a pipefitter, and a steamfitter is a non-plumbing pipefitter. Although most business agents will say “pipe is pipe”.

What is a laborer? A laborer, not to be confused with the labor force [all of those that are physically doing work] are members of the work force that load and unload tools, help assemble scaffold, dig, and fill holes, sweep and clean work areas, may be fire watch, or confined space attendants, or work with concrete. They may do other tasks that are site specific, but most often
support the other craft on job sites. This description is needed to differentiate between the labor force, a laborer, and a pipefitter.

What do pipefitters wear? Steel toe or composite toe boots [composite is ideal for going into facilities that require passing through metal detectors] and fire retardant [FR] pants [jeans] and shirt [4” sleeve or longer] are the norm. The contractor usually provides items like safety glasses [unless prescription], gloves, welding jackets, ear plugs, hard hat, and other specialty protective equipment [at least on a union job].

Where Do Pipefitters Work

Pipefitters work at facilities that utilize piping in which liquids or gases are transferred from one system or location to another. Pipefitters may work at smaller businesses that have air conditioning chiller units and steam lines, or manufacturing plants that make things such as pharmaceuticals or juices, but most work at larger industrial sites, such as chemical plants, refineries, and nuclear power stations. The liquids or gases that the piping systems are designed to contain can be benign or corrosive and can be under low flow or under high pressure. The piping systems that allow for liquid and gas transfers must be made from materials appropriate to the substances going through them. The pipe fittings and joints must also conform to the type and flow of substances contained to provide safe and leak free transfer of content. Piping systems may be underground, above ground, running through a building, or all the above. Piping systems [underground and above ground] must be held in place by concrete and rebar, pedestals, tamped soil, or an aggregate mix. Piping systems through buildings must also be held in place via hangers, racks, or beams to support the load of the piping material and run, as well as the weight of the substances and flow velocity within the piping. The loads the piping systems must carry have to be secure enough through the run of the pipe to ensure safe and leak free containment. Pipefitters and plumbers in the
Piping trades must carry out the plans that are created by mechanical and civil engineers who design the systems that they work on. These skilled workers must take the blueprints and isometric drawings given to them, along with the materials supplied, and turn them into viable and functioning systems for businesses and industrial sites to provide services and products safely and reliably.

Pipefitters must go to where the work is if they want to make paychecks and ply their trade. Whether this is a new construction site, or maintenance on existing industrial sites, pipefitters must stay and provide the labor for the job. This type of travel leads to a kind of gypsy lifestyle: find the work, pack the truck or camper, plan on being gone for prolonged periods of time [6 months or more], not being home for long periods of time, and knowing that the jobs are temporary because you may get fired or laid-off or find a better paying job elsewhere. This means setting up home away from home, coping with unfamiliar places, losing track of time, and losing touch with family because you are not there. There is also the need to coexist as peacefully as possible with new crews that are formed from people that come from different states, countries, mechanical backgrounds, religions, and political views.

**What Can Go Wrong**

If your air conditioning goes out in your home or a pipe burst in the wall, it is an inconvenience and causes damage, but does not usually cause a catastrophe for an entire community. If piping on an industrial site fails, the problems can range from a minor leak that requires torquing of bolts, or component replacement to explosions and radioactive melt downs. Not only is it necessary to learn your trade and be skilled at it, but you must also be familiar with the safety protocols and procedures necessary to prevent significant injury and system failure.

A pharmaceutical plant, a refinery, or a nuclear power station is not unlike a pyramid, they are all examples of excellent craftsmanship, but pharmaceutical plants, refineries, and nuclear power
stations are complex associations of artifacts. We will never know the finite details of the day-to-day way of life of those who built the pyramids, and we may come to understand how the stones were carved and moved and finally assembled into the shape of a pyramid, but we are incapable of reading an ethnography of the lives of those who did the work of building them. The same can be said for the ethnography of those who have built much of the monumental architecture we have today. This thesis is an ethnography of one population, pipefitters, who are indispensable to the creation of modern monumental architecture and mechanical engineering. This thesis, beyond a focus on what pipefitters do, also addresses a crucial factor that can impede the successful creation and operation of modern industry: complacency. The concept of complacency will be discussed in greater detail in the literature review. For now, the basic definition of complacency is defined as someone becoming overconfident and losing awareness of steps involved with a procedure.

Where Did It All Begin

In November 2005, I replied to an ad in the paper looking for union pipefitters, plumbers, and ac technicians at Local Union 630 in West Palm Beach, Florida (UALocal630, 2017). I was working at Palm Beach County Head Start as a teacher’s aide and I was married with one child but knew I wanted a divorce and needed a better paying job to support myself and my son. I was 34 years old. I went to the apprenticeship hall, they needed women and minorities, I fit the bill. Normally a union apprenticeship and hall only take in apprentices from existing members or close friends. They were trying to obtain grants and funding from the state and needed more minority members. A man named Jerry interviewed me, said that I should be a welder/pipefitter and signed me up. I had a short interview process, just enough to discover that I had some basic math skills and tool knowledge. I was in.
My apprenticeship training began in January 2006. I started out in the basic mathematics course, which was largely learning how to turn decimals into fractions, fractions into decimals, and multiplying and dividing fractions. I had class two days a week, Mondays, and Wednesdays from 6 pm-9 pm. Then I went on to OSHA, First Aid, Union history, knot tying, reading isometric drawings, identifying fitting, and then the weld shop. My schedule then changed to Tuesdays and Thursdays when I started welding. To become a journeyman, it is necessary to complete about 1100 school hours, plus 10,000 OJT [on the job training] hours. This year’s class was the only one that started off in January. Historically, and traditionally, apprenticeships in our hall only begin in the Fall semester around August. Those of us in this class would go to summer school and basically have an expedited semester so that when we started back in the Fall, we would be second-year students. My first job as an apprentice.

My First Job as an Apprentice

On January 3, 2006, I started my first job with contractor John J. Kirlin, as an apprentice at a commercial job on Roebuck Road working at a wastewater reclaim facility in Riviera Beach, Florida. I filled out the requisite W2 forms, and direct deposit slip, I did not take a drug test on that first job. I already knew how to read a tape measure and use basic hand tools [hammer, screwdriver, wrenches, etc.], but I did not know how to work around large equipment like a backhoe, crane, or excavator. Wastewater reclaim facilities [sewage intake facilities that process and filter the sewage that is then sent to water treatment plants for further treatment or sends reclaim water to golf courses] are not places that most pipefitters want to work. The ones that get sent here cannot pass a drug test, or have already failed, they are “screw-ups,” or they are apprentices no one wants in the fabrication shops or on “better” jobs.
The site is an addition to the existing reclaim facility: Large tanks that hold sewage, concrete channels that filter out solids, deep wells that pump water into the ground through the limestone bedrock to be filtered “naturally” through the rock and aquifer system. Sand, backfilled holes and tamped piping for acres and acres. I mostly dug trenches with a shovel, bolted up flange joints using a pneumatic driver or boxed end wrench and hammer, rolled out fire hose and turned water pumps on and off. Sometimes I used a chipping “jack” hammer, sometimes I used a chop saw or reciprocating saw. I knew how to read blueprints before I became an apprentice, so I did have an idea of the layout of the piping systems that were being installed.

I never signed on to a Job Hazard Analysis sheet (JHA) or a safety sheet (JSA), I did not even know what those were. We almost never had a safety meeting unless there was a major incident on a Kirlin job. A safety person was not even on site most of the time. I was given instructions on installation processes but never had to stop or get engineering signatures or quality control inspection or signatures before I proceeded to the next step of installation. We never wore safety vests unless we were working with traffic, and we may not even have a hard-hat depending on where we were working. There were no courses to take to qualify to use any of the tools and equipment, it was just “here this is how you use it” and “go do it”. I did not have a badge and there was no turnstile to badge in or out, just a foreman “Dodge” who kept track of your time.

There are a few things that I remember vividly about this job. The first was that you smell like a shit plant when you work here and people you live with are offended by your stink, so you take a shower and wash your clothes as soon as you get home. The second is that on any given day, depending on which way the breeze is blowing, you either smell the rotting onion aroma of the county dump down the road, or burnt toast and coffee from the International House of Pancakes. Third is that, when you see your supervisor on a backhoe digging a pit to bury piles of rebar and
rusted steel in the back field of a wastewater treatment plant, or you spend days in a cargo trailer counting and matching nuts, bolts, and cap screws, you are probably either on your way to a lay off or a transfer. The last thing I remember from this job, which made me question all of the other jobs I worked on, was the fact that across the service road from this facility there was an Indian burial ground that was used as an overflow location for effluent-wastewater from the plant. This was not a well-known fact and was something kept on the downlow, publicly speaking.

The one thing you do not think about ahead of time when you are new to construction, and something taken for granted, is the bathroom. I was lucky on this first job because the wastewater facility had female restrooms that I could use. There was also the trailer office that had a bathroom in it, I could use that one, too. These bathrooms were always clean; either the cleaning crew on the facility side or one of the apprentices cleaned the bathrooms. If they were a mess, one of us just cleaned them and moved on to other things, or the job would stop, and the bathrooms and work areas would be cleaned before we were able to do any other work.

I worked at the wastewater treatment plant for three months. I was transferred to the Kirlin fabrication shop at the beginning of April 2006, where I was taught how to use the mill saw to cut pipe, the electric and pneumatic beveler to put a bevel on pipe [think of a sharpened pencil with 3/4 of the tip removed and just that little bit of an angle at the nub], the Victaulic machine to groove pipe for clamp fittings [think of your household vacuum cleaner, the flex part that connects to the ring that lets you disconnect and reconnect the flex hose, only in Victaulic the flex hose is pipe, then there is the ring, then another piece of pipe, there is a groove on each side of the pipe and the ring catches both of these grooves and you tighten it together with a crew and nut], the drill press, and the articulating boom lift to load and unload bundles of pipe. I also got some instruction on welding from the shop welders, although this was often met with push back from the shop foreman. “Spud”.
I spent the next year in the shop until some political shifts took place, several welders were let go, and I was transferred back out to my old foreman “Dodge” and crew at another wastewater reclaim job.

I came into the union thinking that I would be treated equally. I came into the union thinking that my work ethic and intelligence would afford me opportunities for promotion. I came into the trade thinking that I would stay either in the same company, or at least in the same county, through the duration of my career. Afterall, most of the people that I worked with were employed by the same company for decades. Or they came from a company that employed them for years and they just wanted to work for a different contractor. People moved, they retired, they passed away. This is how my life and career as a pipefitter began, little did I know the roller coaster ride that it would take me on.

I have been working in the piping trades for over 18 years, starting out as an apprentice at a wastewater reclaim facility in Riviera Beach, Florida, and continuing until my last job at the Blue Oval City Battery Plant in Memphis, Tennessee. The ethnographic portion of this thesis is based on that experience, which includes nuclear, chemical, liquefaction, gasification, refinery, and wastewater reclaim construction and maintenance. The qualitative research includes surveys and interview questions that provide nuance, but also lend support to the ethnographic and academic data on industrial safety.

During my years as a pipefitter working in a variety of industrial sites, I experienced incidences and observed patterns of behavior that undermined safety on a regular basis. The question addressed by the research in this thesis is the impact of complacency and the consequences for safety in industrial sites. This question will be explored for both the behaviors of workers in
industrial sites and the evolution of corporate leadership induced reductions in force of critical infrastructure workers.

All of this information is used to address the problem of complacency in industrial safety and the increase in industrial safety incidence, as a direct result of the evolution of widespread corporate leadership induced reductions in force of essential critical infrastructure workers.
To understand where corporate leadership’s role in complacency fits into industrial safety, it is necessary to understand the origins of safety standards in the United States. These origins can be traced back to post-Civil War America and the “master-servant, worker-owner” (Rosner & Markowitz, 2020, p. 622) dynamic. The changing roles of slave-to-worker, business paternalism, the machinations of factory and industrial jobs, the deplorable working conditions, the introduction of women and minorities to the workplace, and the striking labor workers of post-WWII, all contributed to business owners and conservative politicians anti-labor movements and legislation. Labor Unions often negated health and safety issues in contracts, preferring to prioritize pay and hours, to placate management and provide employment to its members; a decision that would prove costly to human security once technological advancements and higher production demands were in full swing (Rosner & Markowitz, 2020).

The decades of increased manufacturing and industrial tragedies, such as the 1907 Monongah mining accident that killed 362 coal miners in Virginia, in what is considered the worst mining disaster in America, and the increased publicity from these accidents, lead to the passage of the William Steiger Occupational Safety and Health [OSH] Act of 1970. This Act was created to provide government regulations to protect workers against hazards on jobsites in the manufacturing and industrial industries (MacLaury, 2023). The creation of the OSH also facilitated the creation of the Occupational Safety and Health Administration or OSHA, which in turn allowed for the creation of MSHA, the Mining Safety and Health Act of 1977 (Failey & Weinstock, 2014). Another factor that must be underscored when
discussing OSHA, is that of the involvement of Labor Unions in industrial safety advocacy post-OSH. The coming together of multiple trade unions under the American Federation of Labor-Congress of Industrial Organizations or AFL-CIO, gave not only a stronger voice to safety and health, but also provided protections on industrial safety issues such as asbestos exposure, field sanitation, and personal protective equipment [PPE] (Failey & Weinstock, 2014). The most recent contributions to the safety standards are the Silica Standard of 2016—a long awaited act that protects workers from respiration of silica dust particles, and the Covid-19 Emergency Temporary Standard of 2021 (OSHA Online Center, 2023).

The next hurdle for the OSH Act was in its implementation and enforcement. This involved both the written comprehensive OSHA standards and the compliance of these standards in the workplace. The Weir study provides multiple data sets that include union versus non-union regulation and enforcement of OSHA standards and violations, and the effects of OSHA enforcement on large businesses versus small (Weil, 2008). The erosion of private sector unions is also an area of concern when discussing complacency issues in industrial safety because it reveals the weakening of labor laws that lead up to the OSH Act of 1970 (Michel, 2020). This weakening included the Taft-Hartley Act of 1947, which allowed employers to bring in substitute workers in lieu of settling with striking workers (Michel, 2020, p. 2). The introduction of replacement workers weakened the union membership but also highlighted the complacency of unions, a complacency that businesses took advantage of and manipulated. The lack of outreach and desire to organize-in new union members, which included women and minorities often snubbed by union halls, hindered workplace pay, benefits and safety (Mishel, 2020; Sandroff, 2022; Wendling et al., 2020). Nepotism, the favoring of family and friends “in economic or employment terms”
(Encyclopedia, 2018, Nepotism), also permeated the industry and continues to do so. It was not until the passing of Title XII of the Civil Rights Act of 1964 Section C, which made it unlawful for labor organizations to “exclude, expel, or otherwise discriminate against any individual because of race, color, religion, sex, or national origin” (EEOC, 2022, Section C), and the Title XII of the Civil Rights Act of 1964 Section D, concerning training programs [apprenticeships] and discrimination (EEOC, 2022, Section D), that women and minorities were added to the ranks in great numbers.

Private groups or “secret societies” also contributed to the industrialization of America and pushed for labor reform. The Knights of Labor, founded on Thanksgiving Day 1869 in Philadelphia, by Uriah Stephens, advocated for better pay, the 8-hour workday, workman’s compensation, and child labor laws (Onion et al., 2021). The Knights of Labor gave way to the American Federation of Labor, the AFL portion of the AFL-CIO. The Freemasons are another “secret society” whose members are part of labor unions, a brotherhood of self-disciplined members who were urgently needed in the process of industrialization (Kieser, 1998; Newton, 2004; Pisani, 2021). These societies can and do exclude women from equal participation (Pisani, 2021) and have their own membership requirements that are not held to the same standards as federally regulated organizations.

The United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada (UA, 2023) maintains that the primary resource for skilled labor at nuclear generating stations is the union worker (Hite & Kelly, 2006) And while this research did not set out to specifically target union workers, data sets collected were largely from the union piping trades. Most of the skilled labor that responded to the survey questions about nuclear work are union members whereas industries that
include refinery work and chemical plants, may be entirely non-union, or partially union, whether that be in initial construction of the facility or in the regular maintenance after construction is complete. Nuclear work also requires additional protections and regulations that limit OSHA authority and introduces regulations governed by the Nuclear Regulatory Commission [NRC] (Barker, 1987). International Atomic Energy Agency [IAEA] safeguards, inspections, and inventory, between the United States and other nuclear capable countries, are included within NRC regulations (IAEA, 2020).

It is almost impossible to discuss nuclear power plants or stations without discussing disasters like Three Mile Island or Fukushima. The most recent Fukushima tragedy lead Anthropologists to investigate and reinvestigate public policy and opinion, and the continuing habit of experts to focus exclusively on the technical aspects of disaster and less on behaviors (Brooks, 2012). There is additional suggestion that “there is a systemic prioritization of politics and profit over public safety” (Brooks, 2012, p. 2; Button, 2011, para. 4). An anthropological approach to nuclear power is not a new phenomenon nor are the effects of nuclear disasters on human security (Mandelbaum, 1984). In fact, the lack of safety and awareness during the first nuclear era still pervades in this second nuclear era (Mandelbaum, 1984; Wu et al, 2019). Additional studies suggest that, despite previous research indicating that “organization, job structure, and job culture were determined solely by technical factors, independent of national, cultural, or racial differences” (Rochlin & Meier, 1994, p. 162; Shiba, 1973, pp. 26-32), “the unique historical, social, and cultural environments of each [nuclear] plant does have functional operational consequences” (Rochlin & Meier, 1994, p. 163).
Public comments made on the NRC draft of safety culture policy indicated that participants felt that “leadership is the most important contributor to safety culture” and that the “Safety Values and Action” trait was the most important (Public Comments Summary-NRC, 2010, pp. 2-3). Complacency is not a term that is defined when the NRC discusses safety culture and policy; it is recognized as something that “results from long-term success and repetition” and is considered as a “questioning attitude: a culture in which individuals avoid complacency and continuously existing conditions and activities in order to identify discrepancies that might result in error or inappropriate action” (Public Comments Summary-NRC, 2010, p. 8; U.S. NRC, 2014, p. 1) in positive safety culture. It is also “a personal or group weakness that requires methods and precautions” (Colas, 1997, p. 28).

The NRC defines safety culture as “the assembly of characteristics, attitudes, and behaviors in organizations and individuals that establishes that, as an overriding priority, nuclear safety and security receive the attention warranted by their significance” (NRC Library ADAMS, SECY-11-0005 - Enclosure 2-Definitions and traits of a positive safety culture 2011, p. 2), later revised to “the core values and behaviors resulting from a collective commitment by leaders and individuals to emphasize safety over competing goals to ensure protection of people and the environment” (NRC Library ADAMS, SECY-11-0005 - Enclosure 2-Definitions and traits of a positive safety culture 2011, p. 2). Positive Safety Culture traits are listed as: leadership safety values and actions, problem identification and resolution, personal accountability, work process, continuous learning, environment for raising concerns, effective safety communication, respectful work environment, and questioning attitude (NRC Library ADAMS, SECY-11-0005 - Enclosure 2-Definitions and traits of a positive safety culture 2011).
Safety culture is “the attitudes, values, norms, and beliefs, which a particular group of people shares with respect to risk and safety” (Government of Canada, 2023, p.1). Negative aspects of safety culture include the normalization of deviance, tolerance of inadequate resources, time pressure and complacency (Government of Canada, 2023). Merriam-Webster dictionary (2023) defines complacency as “when someone becomes overconfident and starts to lose awareness of steps involved with a procedure” (Complacency). Another definition of complacency, taken from the Bielić et al. (2020) article, defines complacency as “a pattern in which formerly safe behaviors begin varying in form, eventually including deviations that elevate the risk of process incidents and/or put frontline workers at elevated risk or injury, occurring in frontline workers and decision-making management” (p. 2) and “a gradual change in attitude caused by bad leadership or management” (p. 2). Continuous success with few to no incidence, as well as a hierarchy of multiple organizations completing portions of a task or evolution, contribute to the organizational complacency resulting in safety incidence (Johnson, 2011).

Another component of industrial safety and complacency is that of organizational culture, defined as “a particular kind of culture that emerges to promote unity and cohesion and to stimulate the enthusiasm and innovation of employees to improve the economic efficiency of the company” (Bamidele, 2022, p.2). “Organizational culture is an intangible yet strong force among a community of people who work together that affects the behavior of the members of that group” (Bamidele, 2022, p.2). This shared culture, which includes the values prized by the individual corporation, as well as those values supported by each member on the rung of the hierarchy, from employee relations to chief executive officers
and back down to the person on the tools, defines the character of that corporation and its leadership (Khanna, 2024).

Organizational culture often uses performance reviews, incentives, and bonuses to motivate its employees and leadership. The higher the reward, the greater the reinforcement of the behavior that produced the reward. And while positive reinforcement may lead to better performance, evidence of greater financial gain or prestige to a select few, can lead to the reinforcement of negative behaviors that adversely affect the organizational culture (Khanna, 2024). Employees and leadership that are not meeting their goals, as those goals may be changing in the process, may find themselves facing a layoff or termination. A part of this process may include an adverse impact analysis, which determines if there is discrimination involved in the reduction in force based on key identifiers such as gender, race, and disability, information that does not need to be disclosed legally, unless required by a judge, but can also be retained as attorney-client privilege (Strange & Camardella, 2023). This information is included to inform on the process of reductions in force [RIF] and the awareness that certain individuals are eliminated from the RIF process, as they relate to nepotism in industrial safety.

The elderly, handicapped, and minorities, are especially vulnerable to environmental, technological, and man-made hazards, and “depending on one’s race, class, and gender his or her life is qualitatively different, in terms of opportunities and experiences” (Kapucu et al., 2014, p. 7). More affluent communities are concerned with maintaining the status quo after a disaster while “more vulnerable communities are at greater risk of severe environmental disaster and are more receptive to resilience planning” (Kousky et al., p. 49, 2021). The “white male effect” is an occurrence that is observed in conjunction with
environmental issues and has been documented in conservative white males who have never been denigrated or denied and have “high levels of technological and environmental risk acceptance” (McCright & Dunlop 2011, p.2). This risk acceptance is elevated in the fossil fuel industry and the nuclear energy sector. The inclusion of the term “white male effect” also requires the inclusions of, and differentiation between, complacency and arrogance. It is necessary to put into perspective the point at which “self-satisfaction of being unaware of upcoming trouble” in complacency gives way to the “pride and contempt for others and the self-assumption” that is arrogance (Wikidiff, 2018, Arrogance vs. Complacency; Zenger, 2022, para. 5).

The Zenger report illustrates the impact of arrogance and complacency as management and leadership age (2022). This insight leads to another term, greed, which needs to be introduced here, and is defined as “an excessive or rapacious desire, especially for wealth or possessions” (Dictionary, 2023, Greed). Greed, as defined by Stuart Walker, is included in complacency as it “obscures an accurate assessment of the risks and blocks a rational choice” (Blackburn, 2014). Risk is “the uncertainty regarding a future event or outcome” (Banks, 2012, p.1) Risk management is the fourth step of five in the risk framework of risk culture but considered primary and equal to the other four steps, which include governance, rules, identification, quantification, management, and monitoring (Banks, 2012 pp. 9-14). It is the “heart of decision-making, intimately linked to the firm’s risk philosophy, and adhered tenets, dynamics, and decisions [which] are elemental in a company’s progress” (Banks, 2012, p. 14). Systemic risk is the “risk in which many stakeholders have a stake, it perpetuates a generalized overconfidence [of success]” (Årstad & Aven, 2017, p.115). The only way to overcome the negative outcomes of overconfidence is
for each stakeholder to ruminate on current company practices and procedures and implement a means of improvement (Årstad & Aven, 2017, p.115).

Many communities depend on industries to survive and are loathe to report any safety concerns (Haney, 2021). Some safety concerns only become evident to the community around an industry when something bad happens. This does not mean that there are no community concerns before the incident, it is to say that some industrial accidents are not observable until they become catastrophes. Even when investigative units are assigned to evaluate disasters, like the 2011 Fukushima nuclear disaster in Japan, and evidence of areas for needed improvement are identified as needing risk reductions, there is no guarantee that entities, such as the NRC, will accept these results and implement changes (Lyman, 2019). When the proposal for improvements came out in March 2016 concerning Fukushima short comings, it was rejected, and “then Commissioner William Ostendorff stated that ‘the current regulatory approach has served the Commission and the public well’” (Lyman, 2019, para.1). Another area of concern is that of nuclear plants that are aging out and require license extensions to stay in use, a scenario in which it would be logical to think that those aging units [40-60 years old] would be inspected more frequently. The truth is that there are less NRC inspections as well as a decrease in owner responsibility when it comes to preventative maintenance and operational safety, a situation in which “being green doesn’t denote good performance, but merely adequate compliance” (Lyman, 2019, para. 15).

To get a visual on NRC inspections, performance, and color ranking systems, I have included data from the U.S.NRC Reactor Oversight Process Report (NRC, 2021; Nureg-1649, 2016) and the NRC website. Included are the Reactor Oversight Framework [ROF], which is “a risk-informed, tiered approach to ensuring plant safety” (NRC, 2021; NRC,
2024). Second, is a chart of cornerstones and their corresponding performance: “to measure plant performance, the oversight program focuses on seven specific ‘cornerstones’, which support the safety of plant operations in the three broad strategic areas [human performance, problem identification and resolution, and safety-conscious work environment]” (NRC, 2021; Nureg-1649, 2019, p. 4). Third, is a diagram of the reactor oversight process in which “the NRC evaluates inspection findings for safety significance using a significance determination process and compares performance indicators against prescribed risk-informed thresholds” (NRC, 2021; NRC, 2024), which is then followed by the color-coded system for safety performance related to cornerstone indicators. Next, is the Reaction Oversight Action Matrix Performance Indicators flow chart, in which “staff uses the significance determination process to determine the safety or security significance of inspection findings. This process provides an initial screening to identify those inspection findings that do not result in a significant increase in plant risk (green) finding” (NRC, 2024). The sixth image is of the Significance Determination Process color codes which indicates the findings of the inspection and plant risk (Nureg-1649, 2019, p. 6). The seventh image is of the NRC Response to Plant Performance (NRC, 2024; Nureg-1649, p. 7).
Figure 1: Reactor oversight framework.
Source Nuclear Regulatory Commission
https://www.nrc.gov/reactors/operating/oversight/rop-description.html
<table>
<thead>
<tr>
<th>Safety Cornerstone</th>
<th>Performance Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Initiating Events</td>
<td>• Unplanned reactor shutdowns, or &quot;scrams&quot; (automatic and manual)</td>
</tr>
<tr>
<td></td>
<td>• Complicated unplanned shutdown</td>
</tr>
<tr>
<td></td>
<td>• Unplanned events that result in significant changes in reactor power</td>
</tr>
<tr>
<td>#2 Mitigating Systems</td>
<td>• Safety system availability and reliability</td>
</tr>
<tr>
<td></td>
<td>• Safety system failures</td>
</tr>
<tr>
<td>#3 Barrier Integrity</td>
<td>• Fuel cladding (measured by radioactivity in reactor cooling system)</td>
</tr>
<tr>
<td></td>
<td>• Reactor cooling system leak rate</td>
</tr>
<tr>
<td>#4 Emergency Preparedness</td>
<td>• Emergency response organization drill performance</td>
</tr>
<tr>
<td></td>
<td>• Readiness of emergency response organization</td>
</tr>
<tr>
<td></td>
<td>• Availability of notification system for area residents</td>
</tr>
<tr>
<td>#5 Occupational Radiation Safety</td>
<td>• Unplanned radiation exposures to workers</td>
</tr>
<tr>
<td>#6 Public Radiation Safety</td>
<td>• Effluent releases requiring reporting under NRC regulations and license conditions</td>
</tr>
<tr>
<td>#7 Security</td>
<td>• Security system equipment availability</td>
</tr>
</tbody>
</table>

Figure 2: Cornerstones and performance indicators chart.
Source: Nuclear Regulatory Commission
https://www.nrc.gov/docs/ML1621/ML16214A274.pdf
Figure 3: The reactor oversight process diagram.
Source: Nuclear Regulatory Commission
https://www.nrc.gov/reactors/operating/oversight/rop-description.html
Figure 4: Evaluation of performance indicator data.
Source: Nuclear Regulatory Commission
https://www.nrc.gov/docs/ML1621/ML16214A274.pdf

Figure 5: Reactor oversight action matrix performance indicators.
Source: Nuclear Regulatory Commission
https://www.nrc.gov/reactors/operating/oversight/rop-description.html
Figure 6: Significance Determination Process color codes.
Source: Nuclear Regulatory Commission
https://www.nrc.gov/docs/ML1621/ML16214A274.pdf

Figure 7: NRC response plan to ROP assessment of plant performance.
Source: Nuclear Regulatory Commission
https://www.nrc.gov/reactors/operating/oversight/rop-description.html
The preceding information is based on the most current revision of the Reactor Oversight Process. A “New Paradigm” (Halnon) was devised by the chairman of the National Regional Utility Group [NRUG] for the regulatory oversight process to reign in the new era of nuclear energy technology, “ROP 2.0” (2018, cover letter). The old way of doing things was seen as an obstacle to safety improvements and digital controls, in addition to a costly expense to utility customers. The new proposal eliminates looking back at the risk for assessment by the NRC and licensee and focuses on how fast the plant can be “restored to its baseline risk level promptly” (Halnon, 2018, p. 3). There would also be a credit system in which more credit would go to the plants that resolved the issue quickly, positively, and deliberately. This paradigm initially sought to replace an NRC inspection with credit to a plant while allowing plant staff engineering inspection, and the elimination of the color indicators to avoid public and political hysteria (Halnon, 2018). NRC staff instead opted for fewer inspections, reduced the amount of time a plant would be out of the green, which would remove additional violations and oversight, and admitted that “reduced oversight could also result in licensees relaxing standards” (Lyman, 2019, para. 23).

To understand just how entwined the NRC is within their nuclear licensees, one only needs look for the NRC offices housed at nuclear generating facilities. This entanglement is evident in the lack of action against a licensee as it relates to employee retaliation, the inability to identify employee retaliation, the inability to understand protected activity, and reporting of safety concerns, which is especially evident at the Port St. Lucie nuclear plant. As of December 2012, there were “154 nuclear safety concerns secretly, anonymously, without the knowledge of licensee management at FP&L directly
directed to the NRC, the second highest reporting of any nuclear facility in that category” (10 CFR 2.206 Petition Review Board RE [FPL, St. Lucie] Nuclear Plant 2012, p. 27). The information in the 10 CFR 2.206 Petition transcripts detail the whistleblower retaliation against FPL Operations Manager Mark Hicks, for refusing to cold start the unit after he found coolant leakage in containment, which resulted in the discovery of an improperly placed valve and several misaligned piping systems associated with that valve, which could have led to a Fukushima or Three-Mile Island scenario. This retaliation consisted of repeatedly being yelled and cursed at by the executive vice president, and other management, as well as a chilled work environment and a “promotion” which was later eliminated as temporary along with loses in bonuses resulting from low performance reviews which only became negative after Hicks refusal to start the malfunctioning unit (10 CFR 2.206 Petition Review Board RE [FPL, St. Lucie] Nuclear Plant 2012).

Complacency in the fossil fuel industry is motivated by the economy and capital which limits the importance of safety and prioritizes profit. An example of this is the BP Texas City Refinery explosion on March 23, 2005, in Texas City, Texas. The Chemical Safety Board [CSB] investigation into the incident in which 15 people were killed, concluded that “organizational and safety deficiencies at all levels of the BP Corporation caused the disaster” (CSB, 2007, para. 3). Among the issues noted were a 25% cut in spending upon initial control of the refinery, in addition to severe reductions in operations personnel, faulty equipment, inoperable alarm systems, and “testing methods in actual use were contrary to manufacturer’s recommendations” (CSB, 2007, para. 31). The report also stated that the “BP managers and executives attempted to make improvements from 2002 to 2005 but they were largely focused on personal safety-such
as slips, trips, falls and vehicle accidents rather than on improving process safety performance, which continued to deteriorate” (CSB, 2007, paras. 38-39).

Additional reports and interviews indicate that BP had made a profit of $19 billion in 2004 and cut an additional “25% of the budget in 2005” (Doyle, 2016, para. 18). An interview with Carolyn Merritt, head of the U.S. Chemical Safety Board stated that “when you cut that much out of a budget in a facility, you lose people, you lose equipment, you lose maintenance, you lose trainers” (Doyle, 2016, para. 18). Merritt affirmed that BP was cutting costs on the aging refinery in areas which required additional maintenance, and safety protocols (Doyle, 2016). Even with over $21 million in fines, and an additional $44 million in settlements, BP was still fined $87.4 million by OSHA at Texas City refinery in 2009 for separate safety violations, unrelated to the 2005 explosion (CSB, 2007; Doyle, 2016).

Discussions on how to combat complacency in the field often begin with how the complacency got there in the first place. This starts with the idea that we have become habituated to the task, and we no longer have positive reinforcement for the process and completion of the task because we have done it successfully multiple times; variations in the process start creeping in to create “Normalization of Deviance and hazards that no longer feel so hazardous” (Ludwig, 2015, p. 58). Solutions to this complacency often come in the form of checklists, observations, and reinforcement, which may be setting goals, incentives, promotional opportunities, and cross-training (McClain, 2022). The National Safety Council has developed a tip sheet to help employees and organizations avoid complacency, to help them “take action, engage and succeed” (NSC, 2020). There are even arguments made to avoid the term complacency all together. The reasoning here is that complacency can only be used in hindsight, or that there is too much trust that things will go right or that it is just
“human error used as a cop-out” (Dekker, 2014, pp. 119-121). The ultimate solution would be to think in terms of resilience, “the capacity of a system to absorb disturbance and still retain its basic function and structure” (Walker & Salt, 2006, xiii). This concept of resilience, especially where infrastructure and disasters are concerned, has been at the forefront of federal and international policy initiatives since the September 11, 2001, terror attacks and Hurricane Katrina (Tierney, 2014).
CHAPTER THREE: AN ETHNOGRAPHY AS A RESEARCH METHOD

First-Person Experience

Working as a pipefitter in various environments such as new construction or maintaining existing infrastructure in treatment plants, industrial manufacturing, or nuclear power plants, is a unique and harrowing experience. This chapter provides a description of the kinds of sites pipefitters work, the situations pipefitters are involved in, and the activities pipefitters conduct.

A Continuation from the Apprenticeship Introduction

I went back out to work for “Dodge” [the foreman I worked under at my first job] at the Delray Beach wastewater facility in May of 2007. Half the crew was on this job, and the other half was at the Royal Palm Beach facility, there were six of us in total. This plant had acres and acres of sand that had been worked so much that it was a whitish-grey color, and so light that as soon as the wind picked up, you would get sand blasted. The first thing I was told by “Dodge” when I got out here was that there were voids in the sand, and that if I was sucked into one, they would probably not find me—at least not alive The second thing he told me was that if I fell into one of the lidless holding tanks of untreated sewage, that no one was going to jump in and get me out and that I would probably die within the week because of all the bacteria. My job here was to watch the other two crewmen from the outside catwalk, who were in a boat in the holding tank attaching a PVC sprinkler system around the inside of the tank. This sprinkler system would wash down the sewage as the tank level rose and fell. These tanks are cylindrical concrete and steel that are about 45 feet high and 35 feet in diameter. Each of the guys had a rope attached to them so that if they fell in, I could pull them to the catwalk. Fortunately, neither one of them fell in, but it was nice to know that they trusted that I would pull them out.
I was actually pretty familiar with the environment here as this area was where my
grandfather worked for the Delray Beach Water Department, from meter reader to superintendent.
He installed and supervised much of the freshwater piping systems that were run between Boynton
Beach and down through the Florida Keys. He was a prolific picture and note taker. I learned about
the local aquifers, the layers of coquina, and how the piping systems went in because I read my
grandfather’s old notebooks. So, yes, I felt a bit of nostalgia working at this place.

I was transferred to the Royal Palm Beach facility about a month later [June 2007], after the
sprinkler system installation was completed. This wastewater facility was built with the expectation
that a large pharmaceutical manufacturing plant would be built soon, and that there would be a need
for this new facility. This was also a wastewater treatment facility that was designed to have only one
person in the operations office, as everything was electronically monitored and controlled. That
means that valves and actuators did not need to be manually opened to allow liquids to flow or
closed for processing. The problem, after the fact, was that most of the valves were designed to have
the weight of a large amount of wastewater behind them to open and close properly. Unfortunately,
the pharmaceutical plant was not built, so there was not sufficient flow for the system to work
properly.

I remember this job because of the holding pond with frogs [for frog legs], the softshell
turtles that smelled like rotting chicken, and the huge iguanas fighting each other like dinosaurs in an
old B-movie. This place was swampy and forested, I grew up not too far away from here. It was a
totally different environment from the sandy pit in Delray. The biggest things to watch out for here
were rattlesnakes, coral snakes, and water moccasins. I spend most of my break time walking around
in the woods watching the butterflies flutter around the blooming wildflowers. I knew it was time to
go when the crew was assigned to trash clean-up duty for three days.
One of my friends, another apprentice in the class below me, “Bebop,” was laid off. I was sad to see him go because he was fun to be around, I was his work partner on most days. He was smart, but the other guys did not like him and called him “fag” behind his back. He was not gay, but his mannerisms made them think so, I was his advocate, but back then no one cared, and it was hard enough for me to get respect, let alone a man perceived as gay. I was still here because I covered the minority quota, there were no other women out here, and, as far as I know, there was only one other woman at Kirlin, and she worked in the company office. “Bebop” quit the apprenticeship a year later.

I was transferred back to Delray Beach in September 2008. We were working on the expansion for the plant’s scrubbers and solids filtration system. This was a large concrete rectangle with chambers in it filled with varying amounts and sizes of rock and sand to filter out solids. There was a channel in the bottom of this system that required 1” thick metal plate to be welded flat on top of the trench. Me and “Dodge’s” son spent a couple of days welding these plates in place [one of the few times I was able to weld on a job]. There was also a deep well injection drilling company on site that was drilling a deep well through the coquina and coral so that wastewater could be forced down under the bedrock and filtered back up, a plan that I just did not like. The guys doing the drilling were actually oil riggers on a side job, for which they charged $1.5 million, or so I heard.

We had several new guys come on the job around October 2008, they came up from Ft. Lauderdale and Miami. They were working on jobs that Kirlin had in the southern counties. They were paid more than we were because they came from the local down in Ft. Lauderdale. These guys would step in front of me to do the job task I was working on and tell me to go clean the office and let other apprentices-who were below me in the apprenticeship-cut and fit-up piping in the field. On more than one occasion I left the job early due to this treatment. “Dodge” finally had a meeting with
everyone and said that “Christina is not the low man on the totem pole here, she is not cleaning the bathroom and office trailer all the time. We have enough apprentices here to rotate.”, I was not put on bathroom and trailer cleanup again. I was then tasked with being the “ditch-witch”, the person that inspects each of the excavated holes to make sure that they were red taped off and barricaded to prevent people from falling into them. I was also put in charge of making sure the tool trailer was organized, and that all the tools were put back at the end of shift every day.

My First Lay-off

It was right around March 2009, when word got out from Kirlin that layoffs would be coming, and “Dodge” let everyone know to expect them. There were rumors that I was not going to get laid off because I was “fucking the boss.” I informed the crewman that said this that “I don’t fuck for my job. If they don’t think I’m doing my job, then they can let me go.” I told “Dodge” that I wanted the first lay off, he agreed because it would send a message, we were all on the chopping block because of the economic downturn. I was laid off along with a Cuban journeyman, “Maurice.” I mention this only because we were also one of the only job sites still running, and in looking at diversity, there was a woman [me], two Hispanic men, two African American men, two Cherokee men, and two white men. All Kirlin employees not laid off would end up back at the Kirlin fabrication shop, at which point there were only white males and a white female working in the office. I spent three years with this company and earned most of my on-the-job training [OJT] hours at John J. Kirlin, LLC.

My 2nd Job as an Apprentice and 2nd Lay-off

I went back out to work in June of 2009, and was honestly surprised I was not laid off longer. I worked for W.W. Gay, a contractor that was doing maintenance on a powerhouse, that was
setting up for solar panel hookups. This is where I met the man that would be my future General Foreman at Port St. Lucie Nuclear Power Plant in 2012: “Bud”. The first thing I realized about this job was that everybody knew everybody from other jobs because everybody out here travels for work and has worked the same jobs. The second thing I realized was that people will talk about you behind your back, and it is your job, as the listener, to figure out if they are full of crap or the rumors are accurate. I was also working with my welding instructor, “Skippie”, from the apprenticeship, along with another apprentice “Prince,” the son of my future supervisor at Port St. Lucie Nuclear Plant. “Skippie” did not like “Bud” and said, “he was an alcoholic that would throw you under the bus to save his ass.” I found out later that this was true.

Most of the work on this site was at heights and required harness wear and tie-offs if you were more than six feet off the ground or close to a leading edge. I came from jobs that were largely on the ground-no harness wear or tie-off unless you were working in a man lift. I did not have any in-processing training on safety requirements when I started this job and most of the guys looked at me like I was stupid when I had to ask questions like ‘where do I need to tie off”, or when I did not feel comfortable carrying a piece of pipe down the stairs because it was too heavy for me to handle by myself. I wanted to rig the pipe up and lower it down, but I then watched the quality control [QC] foreman struggle to walk it down the stairs by herself. The quality control foreman was the only other female on this job.

“Bud” came and told me that I was laid off after only two weeks on the job. “Bud” also told me that the job was going to man back up and that I could come back out. I was supposed to go back to this job in a month or two, but the joke outside the union hall doors was that “we was waiting for you to come back out, but then we saw that other girl and knew you wasn’t coming back.” That “other girl” was the girlfriend of the female quality control foreman. I guess they had
too many women on the job. Ha-Ha. The W.W. Gay job was the last job I would have until May of 2010.

As a side note to this, I had been giving another apprentice, “Coronna,” who was in my weld class, a ride back and forth to this job. We were laid off together and he got called back to the job, worked there another six weeks, then, they fired him for absenteeism. He was going through a separation, divorce, and child custody issues, and had a previously good track record, having been laid off from his first contractor only because of the economic downturn, like so many of us. He was fired the day before he was supposed to get laid off because he showed up late, a purely “Bud” decision. “Coronna” was supposed to go in front of the executive board [a committee of company owners and union officer members that decide if you should finish the apprenticeship or get kicked out] to defend himself against the reasons for termination, instead he cursed them all out for not understanding his situation and “Bud” for being an ass and not just giving him the lay off the next day. This termination meant that he could not collect unemployment. A fourth-year welding apprentice kicked out of the program.

**My Third Job and 3rd Lay-off as an Apprentice**

I started working for an HVAC mechanical contractor [that went out of business shortly after this job] in May 2010, removing and then replacing air conditioning chiller units and carbon steel piping at Bayshore Elementary. This is where I met “Trophy,” a welder/foreman that I would later work with at Port. St. Lucie Nuclear Plant in 2011. This was not a bad job, we stayed busy, and I could have stayed with the company longer, but found out I was pregnant in June and requested a layoff, which they gave me. Unfortunately, the school told me that, once I was 4 months pregnant, I could no longer go to the weld shop because I was an insurance liability.
I had taken a weld test [ua 21] before I had to leave the apprenticeship. I received a phone call that said that I had passed the test, which meant I could weld in town and on jobs that only required the ua 21 certification. I showed up to the school the following day, was called into the office by the Director, and told that “I’m sorry, you didn’t pass, this has never happened before.” I asked what happened and he told me that the testing company said that I passed but that the weld instructor “Skippie” said that I had not, that I had an 1/8” of porosity [an area of metal that did not break down properly and leaves impurity]. An 1/8” of porosity is still passing, this is our tolerance. I asked to see the x-ray: “Oh we don’t have that.” How do you not have that? This is an important bit of information because I could have been welding on the Breakers job, I could have been welding on the Bayshore job because I passed my bend test [a bend test is when a test coupon is cut into strips and the strips are bent in half, if there is no porosity, it is a pass. This precedes the ua 21]. I had completed all the school hours needed to graduate, I was just working toward getting my weld certs and OJT hours. The school had been turning out apprentices as journeymen if they worked at least 8,000 OJT hours because the economic downturn meant that many of us were not working or were unable to find work in the field.

A Quick Breakdown of My Weld Shop Experience at the Apprenticeship

At this point in time, I feel it is necessary to give a quick breakdown of my experiences at the Pipe U apprenticeship weld shop. My first class in the weld shop was in January 2007. I was technically a second-year apprentice, this is when most pipefitter apprentices start in the weld shop, although many have already been welding by this point. “Skippie” was my instructor. I started off welding flat plate, then moved on to a 6” diameter schedule 40 pipe coupon. Schedule just means the pipe thickness, and 40 is the thickness for this pipe [0.280 inches thick]. A coupon is two equal
size pieces [6 inches long] of pipe welded together. In this case a 2G position or vertical weld which requires stacking two pieces of schedule 40, 6” diameter pipe on top of each other so that they are completely flush and aligned. There is a wire in the shape of a V in between these two pieces of pipe, leaving an 1/8” gap in between. The pipe is divided into quarters, with a ¾” to 1” tack weld going in four places, equally spaced. Once the tacks are in, you clean up the tacks by filing or grinding them, then you begin at one tack and weld around until you have welded the gap all the way around the pipe, this is the root pass. You then layer welds on top of that, this is the hot pass or fill welds. When the weld is just under the surface, and not quite flush with the outside pipe wall, you weld the cap.

I spent 8 months doing nothing but welding pipe in this 2G position. All I heard was that my welds “lacked consistency, weld another.” Normally, after a certain number of coupons welded, the apprentice can cut it apart to check for porosity, then you move on to the next position weld. This did not happen to me until December 2007. I bent the 2G and it passed. I was then able to move on to my 5G weld. I make this point because a few years later, another apprentice bent his 2G and one of the straps broke in half, meaning that their weld did not fuse together. It was a failure. He was allowed to move on to his 5G after only having started welding that semester. I said ‘you have got to be kidding me. If that was mine, you would have told me to go back and keep practicing’. Both “Twinkie” and “Skippie” were the instructors that day. “Coronna” who was dealing with the same issues as I, was also moved on to his 5G position weld.

My 5G coupon, which is a pipe running in a horizontal position, only took 2 months to pass. This is pretty fast in the grand scheme of things. I passed so quickly because an instructor named “Twinkie” gave me a tip on how to make the weld, and it worked out beautifully. “Twinkie” did not know me, and I believe he thought I was a journeyman because I was welding on a Saturday,
typically these are test Saturdays, and I was an apprentice whose school schedule had been changed to 3 Saturdays a month instead of 2 days during the week, every week until end of semester. This same instructor would be my 4th year weld instructor. I moved on to my 6G position weld in March 2008. It was around this time that the hall and the apprenticeship was pushing the 18-week weld program to get more welders out in the field. This had the effect of advancing their 18-week welders, while putting the rest of us on the back burner.

The start of 4th year was August 2008. I was in “Twinkie’s” class. He had a reputation for not passing people on their bend tests, or not allowing them to bend period. I was not really worried about him because he had given me some good advice previously and thought that I would be fine in his class. I started on my 6G position weld, which is with the pipe at a 45-degree angle when welding the root, hot and cap. “Twinkie” did not talk to me at all, and he only stepped into my weld booth a handful of times during the year I was in his class. Several of my cohorts went to speak with the director and some of the board because we were not getting any feedback or instruction from this instructor. I will note here that it is very important for welders to progress to the next level for certification purposes. I was told that I should “ask questions of the instructor if I am having problems with my 6G” per “Pickles”, the BA and “Doc” the union organizer. I said ‘How do I know I am not doing something correctly if I don’t know I’m doing something incorrectly, and the instructor doesn’t tell me? Or if I am not allowed to bend a coupon to see what it looks like on the inside?’ Crickets.

I started my 5th year in August 2009. Rob and “Skippie” were my instructors. Occasionally, one of the old welders from the Kirlin Fab shop would show up to help. One day in particular, “Copper” was watching me weld and asked me “why are you welding like that?” and I told him that this was the way I was told to do it. He looked at me and rolled his eyes in disbelief. For what it is
worth, “Copper” was a jam up welder in his day. After about 3 months of welding my 6G with not much improvement, “Skippie” sent Rob into my booth to have me watch him weld out his own 6G coupon. He really helped me out the most. The philosophy in welding is “just keep burning rod and you’ll get it”. Well, no you won’t, you just learn how to weld the wrong way and develop bad habits.

I was finally able to bend my 6G schedule 40 coupon. After I bent my straps, “Skippie” did a dye test, which means he put blue dye on one strap because there was a pencil dot of porosity visible, this was nowhere close to an 1/8” which is our tolerance. “Skippie” hemmed and hawed, and in the meantime, another welder just bent his straps, this guy had multiple areas of porosity, visibly bigger than the 1/8” limit, and “Skippie” dye tested it. I said ‘are you kidding me? You can plainly see that those are larger than 1/8”, just as you can plainly see that my one speck is smaller than 1/8” in diameter’. “Skippie” laughed and told me to go on to my 6G schedule 80 for x-ray.

**Graduation**

I am not actually sure when I became a journeyman, I know that by the time I went to Port St. Lucie, I was getting journeyman scale. My husband graduated from the apprenticeship program in June of 2010 as a plumber. He then took the pipefitter test so that he could carry two “books” or union cards: one for plumbing and one for pipefitting [on a lot of travel jobs, if you are a plumber, you will not get the job, but as a pipe fitter you will]. He was in the same position I was in, in that we graduated from the program because we completed all our course work, we had our certificates, but we did not have enough work hours. My weld class did not even have a graduation because, after “Caronna” was kicked out, there was one apprentice that was held back a year, that left me as the only pipefitter/welder graduating on time. The interesting thing is that I have a Certificate of Graduation for Air-Conditioning, Refrigeration & Heating Technology [HVAC] from September
2012. My union card says that I am a journeyman pipefitter [because I went to school for pipefitting] and I have been listed and paid as a journeyman since 2010.

My 4th Job and 4th Lay-off as an Apprentice, maybe Journeyman

I started back to work with Farmer & Irwin [F&I], working at The Breakers Hotel on Palm Beach Island in May 2011. I had just given birth to my daughter in February. I was on F&I’s plumbing and HVAC side doing hotel room air conditioning unit removals and copper work. “Moon” was my foeman. I do not know how to do copper work. I am not a plumber, or an HVAC guy. All my experience has been with carbon steel and stainless piping. I had two weeks of copper work at the school, and none of my jobs required that I do copper. There was pipefitting work, but apparently that is for the special boys. The fact that I am not welding on this job hurts me because the more you weld, the better you get. Most guys that pass their bend test, get to weld on jobs, usually supports or piping that is not part of a pressurized system. If you have your ua 21, you weld on pressurized piping systems. I, however, am not given this opportunity or privilege. I spent the first month in the main hotel helping another apprentice “Sleepy” hook up the air conditioning units and the copper tubing. This was where I learned how to hook up the liquid nitrogen tanks to freeze the liquid in a pipe so that a section of pipe could be cut out and replaced [something that happens regularly on nukes]. This is especially useful if you do not want to shut a whole line down, or you have water in the line due to faulty valve seals.

After a month, I was transferred from the main hotel over to the Cabana club by the pool and recreation area. I guess I was too slow and missed too much time, because after four days, I was transferred to the bank. I did have to take a day off to take my daughter to the doctor. They do not like absenteeism here, and there is also the assumption that I did not call a foreman to let them
know I was going to be out. I had called the last foreman I worked with, but that changed overnight. I had basically called the last foreman I had to let him know the situation, my next day back to work I was put on another crew by the supervisor.

Working at the bank, the first problem I had was that there was only 1 port-o-let, I asked about a second one for women, because ‘I do not even know how many men were using this thing and it was pretty gross’. The apprentice foreman asks me where I went before, and I said, ‘the women’s bathrooms in the hotel or the locker rooms. I was told that I could go into the bank and use the one in there.

We were tearing out the old chiller unit, a unit from the 1920’s or 30’s, when installers still wrapped the piping and the unit in asbestos blankets. This thing was the size of a moving van. All the people working on this job are apprentices, the “foreman” is an apprentice, and he was not even here. There was an asbestos abatement company here that bagged and disposed of the asbestos material in a great big dumpster. There was me and another guy cutting the asbestos wrapped piping and removing sheet metal, we did not have any protective gear. I brought this up to the supervisor, “Marble”, when he showed up and he started talking about it being ok because the asbestos was not friable. ‘How is it not friable when we cut through it with a saw’? F&I has also hired day laborers to help clean up the area, most of them working for drug or alcohol money. Everyone on the crew was given a cut of the scrap copper from the dismantling of the old chiller unit. I locked my money in the car because I was afraid I would lose it on the job, it disappeared and I lost it anyway, how convenient.

I was then transferred back to my original foreman “Moon”, who was an actual foreman and not an apprentice, because he could fill out the paperwork to lay me off this job. There were a couple other apprentices here waiting for their layoffs as well, including “Sleepy”, who I would later
work with at Port St. Lucie. “Moon” asked me if I could get out to the nuke because he had to lay me off, I told him that I could and not to worry about it. “Sleepy” would later quit Port St. Lucie, and the apprenticeship because of harassment on the job.

After this lay off, I was still going back and forth to the weld shop at the school to try to pass my ua 21, so that I could go on to my tig certifications and ua 63. I took my refresher for the bend test, and pass. Then went on to practice my ua 21. The old instructor “Skippie” was kicked out, and this new instructor “Polly” tells me “I don’t know who’s been teaching you to weld but they’ve been teaching you wrong”. This is because he thinks that “Skippie” taught me how to weld, when in fact, it was Rob, a great instructor, who passed away from cancer. I continued to practice welding until I started back working at Port. St. Lucie.

**Journeyman Status**

After my lay-off at Farmer & Irwin, I went to the hall to ask my Business Agent, “Pickles” about working at the Florida Power & Light Nuclear Power Plant in Port St. Lucie Florida. I was put on the list, and in October 2011, received an e-mail and link to fill out my employment history and a course on radiation and nuclear plant systems for badging. I never had a desire to work at a nuke, but due to the lack of other job opportunities, the fact that I could pass a background check, and had a union pipefitter membership, I was now on my way to becoming a nuclear worker. The only reason this job and all these trades people were out here was because of the EPU [Extended Power Update], which allowed the units to operate at 20% higher capacity. To give you an idea of how large this project was, there were more than 500 welders and pipefitters on this job. All of the available pipefitters and welders from local union 630 were on the job, including retirees and plumbers that took the fitter test to go out as fitters. Once the bench was cleared [meaning there was
no one left without a job unless they could not pass the background check], the remainder of the slots were filled by travelers. This number does not include the other craft on the job, which was easily more than 2,000 people.

My first day in, I went to the in-processing tent at the end of the sidewalk entry to the plant. I waited for my name to be called and I signed my referral slip, which had me listed as a journeyman. I was not sure if all my hours were in, but I was not going to say a thing. I was contracted to work with Bechtel, a company whose first “megaproject” and claim to fame was the Hoover Dam, completed in 1935 (Bechtel, 2020). This job was the first one that I had worked where I saw more than just two women on site. More than just a secretary and me, more than a female foreman from another local and me. This was also the first job that I have ever worked where there are laborers on the job, the actual laborer union workers. Many are women, and I was often confused for a laborer, something that happens a lot because there are not that many female welders or fitters in the field.

The badging process includes a drug test or Fitness For Duty [FFD] (NRC, 2020), a complete background check including any arrests as a minor or expunged information, and psychological evaluation, which includes 200-500 questions about hating your mother, liking flowers, and enjoying marijuana at the party you were at last night. If security does not like your answers, they send you to the shrink [my husband was sent to the shrink]. My photograph was taken in anticipation of my clearance, and I was given a sheet with all of the required computer work I had to complete before I could receive plant access. NANTel is also included as part of the in-processing procedure. NANTel is the National Academy for Nuclear Training e-learning system and is a nationwide system that provides training courses before you can perform most nuclear work (NANTel, 2020). These courses include plant access training and radiation worker training, along with material handling, scaffold safety, hot work [grinding, welding, torch cutting], rigging, fire
watch, and other essential worker training and can take 7 days or more to complete for a first-time hire, or 2 days for a renewal. These qualifications, or “quals” are checked and printed daily, through a computer check system before you begin each day. At any point in time, you may be asked to do a task requiring these skill sets and training. [The Fall Outage at Port St. Lucie 2022: all craft including the GF’s and Supervision, needed rigger 2 qualifications because they had expired. No one could get them because there was no instructor on site. This was a bad situation because rigging and moving piping is a regular activity and if no one is qualified, no one moves or “flies” pipe, valves, or other components with the crane.]

The process of obtaining a “red badge”, a Department of Defense security level clearance badge that allows access to classified information or sensitive material, can be a long one (Baylor, 2016). It was after Thanksgiving in November, which means that I had been sitting outside the gate for six weeks waiting to get in. Without a “red badge” workers cannot gain access to the exclusion area, “an area in which the licensee has the authority to determine all activities including the inclusion or removal of personnel and property from the area” (NRC, 2020). During this time, I had completed all NANTel courses, all Bechtel courses and all FPL courses required to actively engage in my job tasks. I was assigned to work in the warehouse outside the gate [outside the exclusion area] expediting items that were going into the plant, until my red badge was processed through. After getting clearance, I was then escorted to the security gate, and told to go to Alpha tent after I badged in, but first I had to clear the badging office just outside the entrance. My right hand was scanned for fingerprints, and I received my red badge with my name, picture, and ID number. I had to go through the entry point, which meant going through the “puffer” which sends out a puff of air and scans for explosives and drug residue, next was the x-ray portal, while my belongings went on the x-ray conveyor, then on to the hand and badge scanner, which unlocks the turnstile for entry.
into the plant. After all of that, it was time to figure out where Alpha tent was located. There was no map, I had to ask around [in future outages, this would become old hat]. I then needed to find the General Foreman, who I did not know and who was not named before I left the in-processing tent [office personnel tend to get comfortable with the badging process and forget that new people do not know where they are going or who they are meeting]. I also needed to try and find the dosimetry office to scan for my current radiation dose and receive my TLD [thermoluminescent dosimeter], which tracks personal radiation dose while at the plant [even if you do not go into containment, it is still a prerequisite]. All the above steps are standard for nuclear plant entry, the only difference being the length of time it takes for a red badge reissue if you have been out of nuclear for more than 365 days, 24 months according to Baylor (2016) or lose your red badge for some reason.

A nuclear facility is a maze of office buildings, roadways, chain link fences and concrete barricades. The first thing most people notice are the cooling towers where the steam escapes from the reactor building. Most assume that this is radiation. It is not, it is only steam, if you are at a nuclear plant and you see steam or white clouds billowing out, it is because the unit is up and running and producing energy. The “can” or containment is where the fission process happens, the structure usually looks like a huge concrete can with a dome from the outside. The second thing you realize is that everything is measured by elevation. If you need to go to the turbine deck, you are on 72’ elevation, mezzanine deck is 36’ elevation, anything below the concrete floor at the entry level is a negative elevation. You need to know where you are going, Unit 1 or Unit 2, or you will end up in the wrong location or in a dire situation. Each nuclear plant has its own elevations for each level due to its relationship with sea level, and no two are exactly alike.

My first foreman was “Duck” on turbine deck Unit 1. Some things you learn on these jobs are that most people have a nickname, that there are people you really do not like, that you prefer
not to work with and who prefer not to work with you. For me, that person was “Duck”. I have no idea what I am doing, and I have not been familiarized with the activities on the crew. I also do not understand the whole process of signing on to a package [the written details and process of completing the task at hand] because I have never worked in an environment that required these things, at least not from me officially. “Duck” did not help at all with this acclimation process.

I had been grinding the zinc coating off flat plates so that they could be welded to stands for tanks. This material was actually not supposed to be zinc coated, the wrong plates were cut, and the tanks already placed on them, so there was no way supervision was going to lift the tanks to replace the zinc-coated plates and replace them with what was actually supposed to be there. Hence the need to grind the zinc coating off before welding. The fumes from this zinc coating can cause fever, headaches, nausea, and chest pain, I was using a ventilated hood while grinding.

The female welder [not out of my hall] who was on the crew and welding the stands that I was grinding, talked to me sometimes but had not helped me much. There is a misconception that women stick together on these jobs, this is not so. A woman will not necessarily stand by another woman, especially if she is trying to align herself with a certain clique, a clique in which associations with specific people and no others, will be favorable. I worked on this crew for about 3 weeks. I was chastised for taking a day off work [I work 6 days a week, 12-hour days] due to my daughter being sick [she was only 8 months old], my husband worked the night shift at the plant [he was a pipefitter as well]. I was told by “Duck”: “You got all these other journeymen up here complaining about you taking time off when you just got here”. He was spitting sunflower seed hulls on the deck the entire time he was saying this to me.

After Christmas, I was moved to another crew and “Tomato” was my new foreman. The first week on his crew, I ended up getting him inadvertently written up because I did not sign on to
the “package”. A package is literally a binder or folder that contains a sign-on sheet, the procedure, the inspection sheets, the prints, material invoices and other miscellaneous information for a specific job task for projects or maintenance. This was an easy pick for supervision because I was the only female on the crew [and one of only a handful of females in the fab shop] and a female’s name was not on the sign-on/signature page in the package. This incident made me hyper vigilant as far as paperwork was concerned, and something that irritated subsequent work partners in years to come.

I was working with a journeyman out of Tampa, on an oil pump installation on top of an oil tank. Part of the process required piping to the tank, which included an elbow. Elbows are either a short radius or a long radius, if you are adding this to a pipe measurement, you either add or subtract the size of the elbow for a short, or 1 ½ times the diameter for a long. “Tampa” asked me what was going on because the standard was for a long radius, which is how they were doing the math, and coming up short on the fit up. I told him it was a short radius 3” 90 [elbow], which meant their pipe was an inch and a half too short. This was the first time that I actually felt useful on the job. “Tomato” was demoted a few weeks later for other issues and his crew was separated out into other crews.

As a side note, the one nice thing about this job was that there were portable bathrooms here with air conditioning, that were cleaned regularly by laborers. There were also permanent bathrooms, “porcelain thrones”, the holy grail of toilets, and hot commodities on big construction sites. [In later years, the same portable bathrooms, some 12 years down the road, would still be in use, and in horrible condition].

My last job task during this EPU outage was torquing snubbers, basically a giant shock absorber about 4 feet long, that look more like a giant stainless steel spark plug. Torquing snubbers means tightening the snubber to a specified pressure for the component they are connected to so
that it is protected from excessive jarring [usually pipe or fittings in a system]. This day, I was supposed to torque 4 snubbers, all in the same area on the mezzanine deck. I had to wait for Quality Control to observe the torquing and sign the information in the package. I was working with “Fox”, because of the aforementioned demotion of “Tomato”, to complete these tasks. I was in the deck, which required that I wear a harness, sort of in the floor grating between the upper deck and the lower deck. Each elevation has metal grating [3 x 6 panels that are screwed to the floor frame] for floor decking, this is what separates the floor/elevation you are working on from the one above or below. There are additional support beams under the decking that is also used for pipe supports [imagine the scene in Star Wars with Han Solo working in the decking of the Millenium Falcon trying to fix the ship to make the jump to hyper speed before they navigate the asteroid field]. I had all the tools necessary for the task and the packages for QC sign-off. The Supervisor, “Queen” was pissed-off that I was “just standing there not doing a fucking thing,” when he yelled for my foreman and said “why the fuck is she just standing there? What the fuck!” “Fox” said “what do you want me to do? She’s waiting for QC and has all the tools ready. I already called QC and it is going to be a while”. This exchange was audible to everyone on this elevation.

My First Lay-off from Port St. Lucie

I was laid off on February 17, 2012, along with some travelers. This was my first of many layoffs from Lucie and I would later learn that this was a major issue because local hands are supposed to stay on the job and all the travelers are supposed to be laid off first, unless, of course, you are considered a slug, or they are looking to get rid of you. There were many travelers still on this job. When you are new to the union way of doing things, do not have any family members in the union, do not know what is “legal” and you do not know the right questions to ask, or even that things are just wrong, you cannot properly defend yourself or recognize a problem. I have also been
given the wrong information so as to not file a grievance or report an issue with the EEOC on previous occasions. The pipefitters and welders that did not get laid off were friends of the Supervisors, or GF’s, or relatives of FPL and Bechtel. These people stayed on the job through to the next EPU upgrade on Unit 2 in the Fall of 2012, then continued to the Turkey Point nuclear facility in Homestead, Florida, from 2012-2013. All told, they probably stayed consistently employed for two years. Another issue at hand here, is the fact that there were no other local jobs going on, the economy had not really picked up for those of us in the trade, and organizational alignments meant that certain people maintained or gained employment, while others did not.

I remember much of my time at the end of this EPU. I had attempted to get a day off to go to the courthouse to get my marriage license. My fiancé at that time, now husband, was on night shift. I was denied time off to get the license and to get married on February 22, 2012. My husband, however, was given the time off. We had planned to take our honeymoon after he was laid off, as it turns out, he was laid off two weeks after we got married but we did not take the honeymoon until May.

I, again, went back to the weld shop at the apprenticeship. I needed to do my requalification, just like before, which usually consists of burning a few rods and running some weld stringers. This time, however, “Polly” told me that I had to do an entire ua 21 coupon, meaning that I would have to weld out an entire coupon from root pass to hot pass to cap. Something totally out of the norm [he would also tell the former instructor “Skippie” to do the same]. I was on the only machine available in the shop, which was not working properly, and “Polly” was nowhere to be seen for help. I went over to the union hall to talk with my business agent “Pickles” about the issues at the weld shop, “Pickles” told me that “maybe I should just start over on the west coast” [local union 123 or the extension of Local 630’s apprenticeship in Tampa, which was a union member’s house].
me? I am a product of this hall. It is at this point that I feel the need to mention that both “Pickles” and “Polly” were ring wearing members of the Freemasons. It was also at this point in time that I decided to stop trying to get my weld certifications and just be a pipefitter. I had spent 5 years in the apprenticeship program, had to deal with numerous roadblocks to obtaining weld certifications that other apprentices did not, and finally had any joy of welding sucked out of me, to the point that I just did not want to do it anymore.

**My Second Trip Out to Port St. Lucie**

I was laid off for about five months when I got the call to go back out to Port St. Lucie for the Unit 2 EPU August 2012. “Birdie” was my foreman on this outage, and he basically put me in charge of the prints for prepping the pipe for all the systems he was working on, as well as organizing the parts trailer for everything we needed for the jobs. I was also put in charge of watching “Prince” who was “Birdie’s” apprentice nephew and “Queen’s” son. “Prince” would hang out with “Pretty Boy”, and they would often disappear together. “Queen” was an alcoholic and liked to hit people, and “Prince” was addicted to pills, which caused “Prince” to get kicked out of the apprenticeship and the union hall the following year. No amount of bribery from grandpa [a retired fitter from local 630] could get him back in. Once “Birdie” got promoted up to area foreman, “Tacklebox” was promoted up to foreman and I was working on his crew.

“Tacklebox” was the son of an incredibly talented pipefitter, he made sure that everyone in his crew was on the same page, gave me jobs that he needed done because he knew I would do them, plus, I was good at keeping the paperwork organized. We were unofficially the “old people, cripple and chick crew,” and “Tacklebox” told me later that I “was the glue that held the crew together.” I was also working with my old instructor “Skippie” again. “Tacklebox” also made sure that the GF “Bud” [from the W.W. Gay job] did not harass the crew or break the hierarchy of
command. Many times, Supervisors and GF’s will get comfortable with people they work with at every outage. This is largely because a foreman will get promoted up to a GF, and a GF will get promoted up to a supervisor, and that supervisor, is often more permanently promoted to a project superintendent. And while their positions may change pre-and-post outage [there are not enough craft in the off-outage times to warrant all these positions, there may only be 3 pipefitters post outage], they forget about the chain of command process, muddling this chain of command and creating a situation with no boundaries and confusion. This “comfort and confusion” also makes leadership feel as if they can talk to any crew member at any time without going through the crewman’s immediate superior. It also means that they try to line out the crew on a job without informing the foreman or general foreman of the job task. Some supervisors have been “off the tools” [not working with their hands] for years and are out of touch with the intricacies of the installation and removal of newer components. And some just feel that they are entitled to yell at you whenever they want, like the situation with “Queen” or one in which “Bud” yelled at me in the fab shop for not going to the union meeting the night before. And sometimes, the behavior is endemic to the place of employment.

At the beginning of October, I needed a layoff to take care of my husband, who was getting ready for gallbladder surgery. My sister was also going to be married on Saturday the 6th just prior to this surgery. I had planned to go to the wedding while my husband was home prepping for surgery, then I would be back home on Monday for his procedure. I had talked with “Tacklebox” about getting a furlough for two weeks or a lay off. He told me not to go, or to just call out sick and come back to work because “Bud” was not a sympathetic person. “Bud” did give me the layoff on Thursday but only because I told him that I was not coming in on Friday and Saturday. I think that layoff was partially because I went to the hall to talk to “Pickles” [this was to inform him that my
husband needed medical care and that I would be helping him to recover. “Bud” seemed really put out, partially because he found out I went to my sister’s wedding, but also because he did not feel it was necessary for me to be home to help my husband recover from gallbladder surgery, just like he felt I should go to the union meeting even though there was no one that could watch my infant daughter [my husband worked nights].

Union Politics 1.0

A jobsite that has laid craft off, has set the precedent for all subsequent layoffs, if I ask for a layoff, they must oblige. If a jobsite is hiring in, they cannot lay off at the same time. This outage did not require as many pipefitters and welders because leadership knew what to expect from this EPU, they also knew when they reached certain benchmarks, that they could start laying people off or transferring them to the Turkey Point EPU.

I was laid-off from this job on October 4th, 2012. “Bud” spent years telling everyone that my husband was a slug, which is someone that does not work or does not work hard on a job, and bitching about how “I gave you a layoff and you went to a wedding!”. He played politics the entire time he was GF by giving welders that could do him favors, the better welds on the job, he went to the retirement dinners to try to procure votes, as he was trying to vie for “Pickle’s” job as business agent [BA] or “Doc’s” position as organizer. After he was laid off from Lucie as GF, “Bud” got a call out by name for a job he had not been to in over a year, plus he was lower on the layoff list than I was [unions have the out of work list and I was perpetually at #265 “after the retirees were removed”]. I called “Pickles” and asked, ‘how could someone who was laid off 6 months after me, and not worked for the contractor that called him out in over a year [ employers can only call you out by name if you have worked for the contractor no farther out than a year ago], go out to work
before me?’. All he said was that he got a call out by name. “Bud” was later blackballed when his attempts at politicking went south, and he had to travel out of state for work.

“Pickles” knew that jobs were going to be pretty scarce because there was nothing else out there locally, and this is the point at which my husband and I realized that, if we got word of a job out of town, and we called “Pickles” to call that hall to find out about that job, that “Pickles” would call that hall but send his buddies instead. Real Union jobs are Business Agent to Business Agent, meaning that my BA had to call their BA to find out about jobs and send paperwork so that they can then call us out to the job. It is now, when there is no work and no money to pay the bills, that you start looking at the rings that men are wearing on their fingers, and you notice that there are an awful lot of Freemasons around. It is also around this time that the term “double-dipping” was used to describe my husband and I both working at the same time and collecting a big paycheck, especially when we were working the nuclear shutdowns. And the attitude was that, as long as one of us was working, that was good enough. Hello, I pay my dues too. I did not get a call out for work through the hall again until January 2015.

**Union Politics 2.0**

Unions do what is termed “salting” jobs, this is when unions send workers to a job for work to try and bring the workers and the contractor on board with the union. My husband and I both applied for work for a contractor that was two miles away from our house. My husband was also working on paperwork to go to Canada to work the oil sands projects. Because I had two kids that were too young to be without at least one parent, I stayed home and tried to work locally. After the EPU’s ended, most of local 630 found themselves unemployed, and in February 2013, a small number of them ended up in Canada, including my husband. There was also a small hospital job down the road that the BA said, “was going to take fitters any day now” and I was never called. My
husband was called twice when he was in Canada about coming out and working on the salted job, he kept telling the guy to call “my wife because she can weld” [I did not need certs to weld on this job]. I contacted the organizer “Doc”, about this several times, and even called the company to tell them that I could come out. The last conversation with “Doc” went something like “I know how it looks, but” I said, ‘It looks like they don’t want women out there. But that’s not how it is”? “Doc’s” son was on this job, a third-year apprentice, and he was welding, as well as “Duck” another ring wearing Freemason, and quite a few other local hands. I never was called out to work. I ended up getting a job at Home Depot until we finally moved out of Palm Beach County in June 2014. My husband’s last job in Canada ended in December 2014.

**Port St. Lucie, Spring Outage 2015**

My start date for Port St. Lucie was February 15, 2015. Day and Zimmerman [D&Z] was my contractor. It took me about 7 days to process-in because I had to do a five-year background check after not being red badged for two years. My GF was “Harley,” he lined me out with my crew, the foreman was “Doobie,” who would later become the night shift GF. There were three shifts available, and I took the swing shift 9 am-9 pm, three shifts gave 24-hour coverage. The Fukushima modification projects were going on during this time [these were modifications to plant safety because of the Fukushima disaster in Japan]. There were more crewmen than at an average outage, which usually consists of 40 people on days and 40 on nights. Our project alone had about 20 welders/fitters. My foreman was “Ken,” an average welder with an ego and a dislike for women in the field, he had the impression that I was stupid. His crew was going into containment, and I had a lot of questions and concerns because, although I had worked on two EPU’s, I had never gone inside containment [this is where the radiation is]. I really grew to hate “Ken”. “Ken” and the rest of
us on the crews, did a walk down of the job for this shut down with “Doobie” in containment before the shift splits so that we all knew what we were doing and where.

On our first “jump” on the swing shift in containment, I had to use the women’s dress out, this was in the building to containment on Unit 1, the guys used the trailer outside the building. They finished dressing out before I did and walked away, I actually waited for them outside for a few minutes because I did not know if they came out, I asked a guy in the dress-out and he said that no one else was there. I walked down to the Unit 2 entry, proceeded inside, and waited at the Radiological Personnel or RP desk for the guys on my crew. The standard rule is that you do not go anywhere without your crew or without knowing exactly where you are going. “Ken” and our other crewman came back to the desk with a shit eating grin on his face and said, “well we waited but we just went ahead in and checked everything without you”. This fueled my future distrust and abandonment issues in containment work. This also shows the arrogance of “Ken”. Most experienced containment workers make sure that everyone sticks together, and that if you need to separate, you take a buddy with you, you are each responsible for one another.

Dress-out is basically a locker room in which you take your street clothes off, you can have scrubs or shorts and a shirt on, then you put on the protective clothing: cloth booties, jumpsuit, cotton gloves, rubber gloves, rubber booties, head hood covering [usually with open face] and a hard hat cover. Most people just wear scrubs all day, so they do not have to get in and out of their street clothes. Each time you go into containment for the shift, it is a jump, after you come out, the next time you go in for the shift it is the second jump, there are usually no more than three jumps in any shift, and a jump rarely lasts more than 3 hours from the time you dress out to the time you come back. In between jumps, you go back to the break room and take a break until the next jump or until it is time to punch out for the day. These three-hour jumps are designed to keep you from getting
overheated or collecting too much dose, and in recent years, there has been a trend in extending these jumps and going strictly with the containment temperature. If containment is 75 degrees F, safety likes to say that “there is no stay time” meaning you could stay in there all day, and many may feel pressured to do so. The problem is that you are dressed out, you cannot use the bathroom in containment, and cannot eat, smoke or dip. The NRC has also raised the annual dose rates since I have been a nuclear worker, from 1000 millirem to 5,000 millirem annually. There used to be a permission slip that radiation workers filled out to exceed their annual dose, but now it is set at the maximum allowable.

Before you can go into containment, you are supposed to review a package for scheduled activities, or if you are not working on an actual system or component, review the activities you will be doing [identifying tools and materials needed, staging and barricading materials and components, doing a walk down]. The JSA [Job Hazard Analysis] sheet needs to be filled out, this has the time, foreman and supervisor names and signatures, hazards that may be present and the job activities that are to be performed. There is also a “trip” ticket that needs to be filled out. If you are in containment, you must go to a brief with the RP on duty. Depending on the location and job task, you may be required to have a brief before you enter containment each time, some “jumps” only require that you see the RP the first time you enter. This ticket is signed by the RP and has all your radiation dose information, as well as the work order number under which the dose will be recorded and job task. You need your own personal TLD and the dosimeter from the RP checkpoint. You scan into the computer with your badge and then scan the TLD and dosimeter, then make sure that you are in the system. You then badge and scan the dosimeter at a turnstile to go through the gate to the “back yard” or the area that has containment, the auxiliary building, and several outbuildings.
You also perform this same scan after you dress out and before you enter the containment hatch [security is also here to check your badge information].

This outage is particularly memorable to me for two reasons: First, it was the outage that my dad’s wife, Karen, died March 27, 2015, 4 days before her birthday; second, 15 minutes after I was notified of her passing, I was sent to Employee Relations. Everyone was in this Employee Relations office: my shop steward, the employee concerns head, the FPL head, my General Foreman, my supervisor, the head of Day and Zimmerman, my contractor. I was informed that someone inside containment had made a complaint about me saying the “N” word, yes that “N” word. I denied this, as half of my family is black, I do not refer to my family in that way and could not refer to anyone that way. I further went on to say that this person obviously did not know who I was or who my family was, because I would never say that. The conversation went from “You said this” to “who has it out for you” within 15 minutes. I was then pulled out of containment and off my crew, and the incident was investigated for four days. I was found innocent, no paperwork was filed, and I was allowed back in containment. I will tell you this much, I was the only female in containment. The laborer women were not allowed past the RP desk, there were no female electricians, boilermakers, or scaffold builders. Just me. I also would like to point out that in the future, the Nuclear Energy Agency [NEA] would collect data and surveys from women in the nuclear industry and find that women were still unrepresented, lacking in salary, and upper management placement even in 2021 (NEA, 2021).

Once I got back to my crew, you could have heard a pin drop. No one expected me back. It was then that I knew one of my “brothers” had set me up. And it was at this point that I learned I had to watch my own back even within my own local. I played up being the stupidest fitter they had, completed the rest of this outage without incident and was laid off in April.
I came back to Port. St. Lucie for the Fall outage 2015. During this outage, I was in a different section, and not in containment. The crew was doing mock-ups and practice for a hole penetration. Basically, we had to drill a hole in a pipe in the system, so that a test valve could be welded into place. This required that minimal debris be introduced to the piping while drilling. My husband was also out here for this outage, though he was working with a different crew. I happened to investigate the break area of the crew that I was working with last outage, and there were more women than I had ever seen at FPL for a regular maintenance outage: boilermakers, electricians, laborers, they had them all.

I ended up being rotated around and loaned out to other foremen who were shorthanded. One of these foremen was “Hillbilly”, he was a Mason who wore the ring proudly as well as a racist and had already written up 5 of his crew members the week before. Me and another journeyman, “B”, were tasked with installing a rubber gasket and bolting up an elbow fitting on an 18” piping system. We had never been on this job or evolution, we did not know what the expectation was, and we were reviewing the package. We were told by the supervisor “Mule”, also a Mason with a ring, to “bucket out the water” that was in the lower half of the pipe for inspection, which we did. We were then told to inspect the gasket, place the gasket on the flange, and begin the bolt up process by “Harley” who was back again as GF, he was also wearing the Mason ring. At this point in time, “Harley” got angry, stated that the gasket was overhanging on the inside of the pipe, which was “the same problem they had with the old gasket”, and that we were “poor craftsmen”. This gasket was a handmade gasket that had been given to us by “Hillbilly”. “B” and I were written up, at which point I refused to sign because I stated that “the check list for the gasket only states that the gasket thickness be 1/8” and that the bolt holes line up” which they did. I would also like to add that
“Hillbilly” removed the checklist sheet for the gasket, from the package which is a big no-no in nuclear. You never falsify a signature or remove paperwork. “B” and I would be the 6th and 7th crew members written up by “Hillbilly”, the two guys who were journeymen watching the apprentices cut the gasket were then written up.

As a follow up to this piping system, the big rush was to close out this package and system to give “Hillbilly” an “at a boy.” Unfortunately for “Hillbilly” our gasket “fuck up” also coincided with the fact that the divers who were evaluating the piping farther down the line, had not completed their inspection, so the package and system could not have been closed out that day anyway. “Hillbilly” would get his “at a boy” for finishing another job, but this job was suspect as well.

The following day, my husband was told by “Harley” to go work for “Hillbilly”. He refused because he had issues with “Hillbilly” on a previous job regarding “Hillbilly’s” racist comments. “Harley” told him that he was being insubordinate and that he had to go work with “Hillbilly”. My husband said “Why? So, I can get wrote up too? Dude’s already written up 9 guys in 10 days”. My husband proceeded to get his stuff, which I then picked up my lunch box and bag, “Harley” looked at me and said that this “does not involve you”, we then proceeded to leave, and “Harley” said that “we would never work there again”. This was all on full display in the break room, in front of other craft and crews. My husband and I turned in out TLD, scanned out, dropped off our badges at security and left the site.

We drug up and went to work the shutdown at Plant Hatch in Baxley, Georgia. This would be the first time that I drug up from a job. Dragging up is when you leave a job without a layoff or termination and go find a new job. When you are a pipefitter, you can leave a job and find another job any time you want; if there is another job to go to, you can stay consistently employed. A part of
the pipefitter code is that if you show up on a job and you travel with a partner, that, if the partner drags up, you go with them. It is the code of the road, but it is also a way to hurt the contractor for manpower, especially when they are breaking down conditions.

**Plant Hatch Baxley Georgia**

My husband and I arrived at Hatch at the beginning of October 2016. We were contracted out through Day & Zimmerman. There were quite a few Local 630 hand on the job, which was to remove and install two heat exchangers in their unit. We spent most of our time in containment, replacing heat exchangers, which are long cylindrical metal tanks that have tubes in them filled with fluid that heat up and cool down, and works like a radiator, also include the installation and removal of attached piping systems, and supports, along with gauges and drain valves. I recall this outage because I worked nights and had a foreman “JJ” who wrote me up for not staying in containment longer so that he could finish a weld. I told “JJ” in front of the GF, that I could not do more than three hours in containment [this was also at a time when there was no safety on nights and the temperature was only taken once in the morning and once in the afternoon]. “JJ” stayed in containment to make one weld for 7 hours. There was no reason for it other than he wanted to make himself look good, and any other foreman would have come out for breaks. The GF could not sign off on this write up because stay times are subject to personal ability, as a matter of personal safety, I have the right to leave at any point that I feel heat stress or any other distress.

Somewhere around this time, D&Z was trying to save time by having the craft dress out and do their RP brief before their morning meeting and before being lined out on the task of the day because “we were spending too much time filling out paperwork at the start of shift”. D&Z, along with several other nuclear contractors had started to put into place the “45-minute combined break-lunch” policy; this required craft to have one solid break in the middle of the day, which may have
been fine on an 8-hour day, but we were on 12’s. They also told us that out breaks and lunches started when we turned our dosimeters in after a jump [we have not even exited the containment build yet]. And that we only got a half hour lunch. We all got up and proceeded to walk out because that is not how nuclear works. My lunch starts when I get back to the break room and after I have sufficiently cooled down from working in containment. Management had to go back to the original meeting and break schedule because they were about to lose their entire work force. I used up all my dose for the year on this job. Dose limits reset at the beginning of the year. My husband and I were laid off on December 23, 2016.

We went home for Christmas and New Year and then came back to Plant Hatch on January 25, 2017. We were contracted out for Williams Industrial Services Group Inc. On this outage, we were working the torus loop in containment, part of the condensate and pressure regulation system. The entire craft was told to sit in an office trailer that had tables, chairs, and microwaves, and not to come out unless a foreman came and got us, which is what we did for the entire three weeks we were there, then we were laid off February 23, 2016.

Once we got our layoff, my husband and I went to the Vidalia Onion Museum in Vidalia, Georgia, which is not too far away from Plant Hatch. On the way to the museum, we passed through a town called Santa Claus, a town that not only celebrates Christmas all year round but is also one of the few towns in which to buy alcohol on a Sunday. The Vidalia Museum is not a big place, but you do learn that, while the sweet onions grown are pretty much the same as a Vidalia, the thing that makes it a Vidalia is that it is grown in the city of Vidalia [there is a boundary demarcated, those in the boundary get to us the name Vidalia, those outside have to use the term sweet onion]. We learned all about growing and harvesting onions and picked up the official annual Vidalia Onion cookbook.
My First and Last Refinery Jobs

My husband and I once again went out for work, in March 2016, this time at Husky refinery in Lima, Ohio working for CTS. The one thing you learn about refineries is that they like to talk a big game about safety, but they do not really want you to work safe, especially if it means you are actually making the effort to work safely, which takes time. Refineries, at least the ones here, are all made up of plots of land owned by different contractors and oil companies, like a city. On this job, my husband and I were working side by side, fitting for a welder, which does not always happen. We got written up for going too slow on the job by our foreman “Blister” and his GF wife “Blondie” while simultaneously receiving safety awards for working safe.

Shortly after this incident, we were working in the same location when I looked up and noticed feet [we were right under a deck] and air hose. There was a crew doing fresh air right above our heads where we were welding and grinding. This is not a good thing because fresh air is under pressure and a spark can cause an explosion. I looked down and discovered that our scaffolding had be red barricaded off at the bottom, no one said a word. The safety guy came and told us to move and called our foreman “Blister” to question him on why we were allowed to work in the area, and why he did not check on his crew. My husband and I were laid off from this job after only two weeks.

We went to the hall in Lima and asked about another job. We were given a call out to the Ashland refinery working for the contractor Jacobs on night shift March 28, 2016. The claim to fame for Jacobs was that they did not give layoffs, you were either fired or you just left. Jacobs was replacing a large diameter pipe, 60” in diameter, the previous piping having had an internal fire [they were fortunate the fire did not escape and blow up the refinery]. This was called the candy cane because it was a big hook at the top of the pipe, with a straight drop down 350 feet to a 90-degree
elbow at the bottom, underground, and then branched from there. We could literally look over the top deck of this refinery and over the fence line to see the job we were just laid off from. You could also see the flare stacks burning off the chemicals from the refinery, each color telling you what was being burned off.

The first week on the job, my husband was asked to be the steward, because there was only one other steward who was working at a different refinery. April 10, 2016, was the latest snowstorm of the season in Ohio, and we were working in it. The wind was blowing sideways, along with the rain and sleet. A day later, a company was supposed to come out and pre-heat the piping that we were welding into place. They never showed up, but we still managed to weld this piping system into place. Preheating and slow cooling of piping is done to prevent cracking of the welds. A few days later, I was sent to repack a valve, [repacking a valve helps keep a valve from leaking steam, or oil]. When I took the old packing out, I noticed a large crack in the cast metal where the stem of the valve went. This valve had been repacked before, and the steam from the line had caused the crack to open wider. I was not going to repack this valve, the supervisor was mad because someone else had wanted the valve replaced and he “didn’t understand why they just didn’t patch it, it didn’t need replacing”. This crack was 5 inches long, ¼” wide, and the steaming oil coming out of it was burning the spindle. My husband and I were laid off April 15. We went to the Lima BA to tell him we got a layoff; he took a picture of the layoff slip because Jacobs had never laid anyone off, and said he’d put our names on the list for Toledo. We never got a call out.

The nice thing about working with you husband is that you get to do touristy stuff when you get laid off from a job. On this trip, we went to the Ohio Caverns to walk through the caves, this is where I found out that I am “cave sized” and my 6’2” husband is not. We also went to the Piatt Castles in West Liberty Ohio. These were gothic style houses built in 1884 and they definitely had
that Victorian style décor inside. There were small chapels the size of closets recessed in the walls, along with cabinets full of Native American beads, crafts, weapons, and trade goods. These castles were creepy and cool at the same time.

**One Last Time at John J. Kirlin**

The last go at Kirlin was a job at the new baseball field being built in West Palm Beach, Florida. My husband and I got hired in on May 9, 2016, and fired along with the rest of the crew on May 18, 2016, for “lack of production”. This means that the crew was not doing enough work to stay on schedule. What this really means is that the lead journeyman “Monterey” on the job got into a pissing match with the General Foreman [who was out of the Ft. Lauderdale local] over the GF’s incorrect piping locations and the GF got rid of everyone. Kirlin would be out of business by 2020.

**LNG Cove Point Maryland**

We started working for Kiewit Energy Company at Cove Point Maryland in June 2016. My husband and I were not allowed to work together or be on the same crew and in the same location. This is an LNG Plant owned by Dominion which means that it takes gas and cools it to the point of liquifying or liquefaction. It is an expansion of the existing plant, in the middle of a neighborhood, on Chesapeake Bay, which aids in the import and export of liquid natural gas [LNG]. This plant has a 40’ high wall encompassing it, partly because of the construction lights and noise, but also because protesters have tried to sabotage the work. Kiewit is a civil engineering contractor [they know concrete, not piping] that is non-union, and was required to hire union labor to do the work at this facility. Kiewit allows its employees to own stock in the company and the engineers to enter the cost codes for the job. This means that leadership tries to break down conditions, like not adhering to set lunch and break schedules, prompting workers to perform unsafe acts [resulting in injuries to the
young and inexperienced] and working in unsafe conditions. This also includes installing piping at heights that is not properly anchored with workers beneath that piping, using truck straps to tie piping down in pipe racks to get the footage [which means that they make the money for installation even though it is not welded into position and bonuses for “benchmarks’], using out of round piping because they saved money on the material, and not providing enough lighting at night to prevent injuries.

There is harassment of workers for not wearing gloves and safety glasses 100% of the time, including times of reaching into a cooler to grab and drink a bottled water [“Toolbox” was on this job and drug up rather than get fired for removing a glove to get water out of the water cooler] and removing glasses to clean them. These infractions often resulted in write-ups, and on one occasion, the termination of a worker assigned to my crew “Squid”, a Local 630 hand and a friend [who refused to take the foreman slot and told them to give it to me], a crewman that I did not even know was getting written up until the supervisor, “Chameleon” pulled 3 write-ups out of his pocket at once [this would later be a grievance with local 602].

Before “Squid” was fired and “Toolbox” showed up to the job, “Squid”, my husband, and myself, went to Washington D.C. for the Bosque festival and to visit the Smithsonian museums. This was the best memory of this job for me because working here is the most stressful job I have been on. To give you some perspective, a supervisor, “Hood”, told me something that stuck with me: “Hood” left Kiewit and had his own business, they kept asking him back, and one day he said yes. I asked him why he came back, and he told me that it was like prison and parole. You hate prison and you get out, but then you get institutionalized to the prison system, and you do something to break parole and get sent back in.
I was demoted after going home for a week in August and moved to a different location. I knew how to read the prints, find the elevations for the piping systems and fit pipe, which is the only reason they kept me around. I was also followed by “Chameleon” on a regular basis, he would hide behind columns and equipment to see if he could catch me doing something “illegal”. Around this time my husband got hurt on the job; he was in the pipe rack, stepping up on the scaffolding, and did not see the scaffold pole directly jutting down above his head [there was no lighting, it was dark, and the pole was not flagged]. He had to step up and crouch down at the same time, he hit his head on the pole, passed out, and was wedged between pipes, the crane had to drop the man basket down into the rack for other craft to get him into the basket and fly him down to the ground. He was taken to the hospital and left in the hallway because the emergency room was full of police officers and patients overdosing and being treated with Narcan. The emergency room staff examined him, gave him a prescription for pain and an anti-inflammatory and told him to stay on bed rest for three days. Immediately following his release, he was questioned by the safety man and given an appointment to go to the “Kiewit doctor” a few hours later. This doctor told him not to take the medication and to show up to work the next shift because he was fine. He went to work next shift, he was put on fire watch because all he had to do was sit and watch a welder weld, he took his pain medication because he was hurt, and almost passed out on the job [he stayed home for the next three days on bed rest and medication].

The reason that these companies do not want you to miss work is because it is a missed time incident and OSHA gets involved, plus they lose safety bonus money. Kiewit tried to have my husband written up for working unsafe, but they had no evidence, he was one of the only people hurt on this job not written up for getting hurt. The company doctor had also told another person, who had a big wooden sign fall on them during a storm, that they were fine and to go back to work,
that person went to the hospital and was told he had two broken ribs. I quit this job on November 18, 2016.

2017 is a Blur of Jobs


March 15, 2017, Azco is the contractor at the gasification plant in North Dakota. This plant is turning anhydrous ammonia into pellets to make it less dangerous for the farmers to use on crops. I was a lead guy for the GF on this job. I helped set up the foreman and was asked to be a foreman on the job. The GF “Deuce” decided that I would not be a foreman because I was doing his job better than him, to the point that, when he was out one day, the supervisor had me take over for him. “Deuce” was so job scared that he came to work 4 hours after he found out I had his job, which consisted of reviewing prints for materials and walking down the lines to see what had been completed, making lists of the items that we were short and putting in orders for missing components. I asked for a transfer off of his crew, he refused, and followed me around the job, writing me up for not completing tasks that could not be completed. This was the first job that I had to go to the hall and complain to the BA. The next day when I came in to work, I was pulled from his crew and placed somewhere else. I was then accused of stealing material, in front of the stew, who had to defend me. My husband was then harassed on his crew, told the stew to “get his wife”, he had already quit, then I had no choice but to quit, too. Code of the road. We drug up on May 17, 2017.

My husband and I made the trip to the Bison Museum to see the white buffalo and her calf. She had died and was at the taxidermy to be added to the displays, her calf was in the winter pasture. We then went to South Dakota, saw Deadwood along the way to Sturgis. We went to the Crazy
Horse monument and Mount Rushmore. We learned that skunks would run directly at you when you are driving down the road in the dark, that the dear and the antelope run together through the hills and valleys and run in herds across the road, the rooster[pheasant] are everywhere like squirrels in Florida, and walleye is just up north catfish [ouch]. We also visited a really cool antique car show.


Truck Plant in Kentucky July 2017. I do not remember who the contractor was, but I do remember that the inside assembly lines were getting totally demolished and new lines put in. I remember watching this huge excavator with these giant clamp claws just ripping out all the metal in its way. I was laid off a short time later.

Corvette Plant in Kentucky, do not remember the contractor, started July 24, and laid off August 1, 2017. After being laid off from this plant my husband and I went to the Corvette Museum. This was a cool experience, not only because all the old model Corvettes were there, but also because the museum kept part of a sinkhole covered in plexiglass on the floor, from the giant sinkhole that opened up under the museum and sucked a few cars inside.

**Vogle New Construction Units 3 & 4**

Contracted out to Fluer at Plant Vogtle Units 3 & 4 on new construction. My husband and I started working here on August 14, 2017. We had never worked a nuke under construction, so this was a new experience for both of us. Most of the supervision and craft were people that we had worked with during the EPU’s in 2012 and 2013. This was not a bad job except for the local hands who thought this was a paper mill [papermills have minimal safety and when the outage for repairs is over, if things are not fix, they just slap a bandage on it and start it up] and they did not like women in the field, racism is also still out in the open here.
I was fitting for welders most of the time, making sure that they had all of their equipment set up and paperwork completed for inspection. It was not a bad job to be on at all. Then Hurricane Irma hit Florida, and my husband and I had to go back home to take care of the kids. Our aunt was watching the kids and she needed to get back to her home. We left the job September 19, with the understanding that we could come back when the hurricane passed, we would be right back to work. We had to fill out a time-off-request form. We got back to the house, and made it through the storm, without a problem. The neighbor’s oak trees, however, had come down over powerlines and the only road into the back of the neighborhood. My husband went back to work as soon as the road was cleared for traffic, I stayed behind because the power was out, and the kids did not have school. I had tried to contact the stew but was unable to do so, the supervisor that I had talked with had also left the job because Fluer was getting kicked off.

I received a letter from Fluer stating that I voluntarily quit my job as of October 3. I called and told them the situation and that I in no way voluntarily quit my job. I had tried several times to contact the stew, as did my husband on my behalf, I had asked about an extension or a lay off. He never responded back to me, I was not surprised by this because I was a female and not a Freemason. This “voluntary” quit affected my ability to collect unemployment, especially since I was trying to collect out of North Dakota, they have $620 a week in unemployment benefits. North Dakota informed me that Fluer was fighting my ability to collect unemployment, there was a hearing, and I lost my case. My husband called me at the end of October to tell me that my name was still on the list as employed for Fluer. He was in the process of getting transferred to Richmond County Constructors [RCC], a shell company created by Bechtel to take the blame if there should be a lawsuit or other liabilities, all Fluer employees were being transferred to RCC.
I called the local to get a call out for Vogtle and began in-processing the last week of October 2017. I was placed with a different foreman in a different location, unit 4 containment, and worked my schedule. I was told that I needed to climb rebar 20 feet up for penetrations [these are holes through the rebar where piping is supposed to penetrate to the other side]. I told the stew that I was not going to do that because I am not an iron worker, they climb rebar. The stew did not want to wait for scaffolding, so I told them that I would go up in a man lift, I was then certified on the man lift. It is now that the job turned into a “get er done” job. I also found out that my old foreman had transferred out all the female members on his crew, except for the one young and cute one.

My husband and I drug up on this job in January 2018 so that we could work our outage at PSL. I could not go out to the PSL Spring outage because I was just over my 365 days to red badge. My husband and I were laid off at the same time, his badge was over 365 days as well, but they let him go. If I wanted to get my red badge back, I would have to find my own way, which I did. I went to Oswego, NY on April 13, 2018, and worked Nine Mile with “Squid” who was also not welcome at PSL. The funny thing is, when there are background checks with nuclear work, you have to put your last date of employment at your previous employer. RCC had my last date of employment with Fluer as October 23, 2017, which is the day they transferred everyone over to RCC. Even though it was incorrect, I had to use that date anyway. I worked a two-week shutdown at Nine Mile, then got a layoff, April 28, 2018. “Squid”, my husband, and I worked in the Turkey Point outage at the end of July. I got roofied on this outage at a bar with my husband and “Squid” right next to me. We were laid off at the beginning of September.

Back at Vogtle September 2018. Even though my husband and I were already red badged and we left Turkey Point less than 30 days ago, RCC will not red badge us at Vogtle, we should be able to walk on with a red badge. I was sent to work on the pro-heat crew and my husband was sent
back to the crew he was on when he left last time we were here. Pro-heat is the convection heating of pipe so that the welds do not crack from rapid heating during the welding process or rapid cooling once the weld is complete. The foreman, “Bowwow” watches porn [yes, the stew knows because he used to be the stew] on the job and does not believe the holocaust happened because “how can that many people be killed.” There is one other guy on the crew, “Gambler” he is incredibly intelligent, and bets on everything, and wins, but he is one of the most racist people I have ever met. The crew just hangs out in the pro-heat trailer until we get a call from one of the weld crews that needed us on the pipe. We then go out and set up the Miller machine [the pro-heat machine is made by Miller] and pull all the material to the location that we need to be working.

Three months into the job, my husband was transferred to the crew, and the crew was integrated into one big crew with a GF. All of us were trained by the Miller company and we all had certificates of completion. Shortley after this, the old GF was replaced by an electrician GF “Sparky” who knew about electrical, but not about welding and piping. This guy did not go through the course and would tell us to set the machine and walk away or would have us run 4 machines by ourselves when we were working in a confined space. We needed one person inside and one person outside for safety. “Sparky” would arrange for us to work on a fitter crew, stop everything if we needed to leave to do a pre-heat, then run back and fit pipe again. Or he would send one-person onto a scaffold to wrap a large bore pipe, that required at least two people to wrap [pre-heat had hoses that wrap around the pipe for convection, there are also probes attached to the pipe for the current]. The conditions grew increasingly worse until finally, on May 21, 2019, after being threatened with a write-up and three days of without pay for leaving early, my husband and I drug up.
**BHI Turkey Point and PSL**

I bounced back and forth between Turkey Point and Port St. Lucie outages from July 2019-November 2019, working for the BHI contractor. I was laid off for the holidays [around this time is when Covid started to make it to the United States]. My family and I got sick right after our family Christmas trip to the happiest place on earth, but there were no tests to see if it was Covid-19, just assumptions based on how we felt. During the Spring outage at PSL in February 2020, most of the Framatome guys [they do valve repairs] had just come back from China. Shortly after the start of the outage, just about everyone was getting sick, and getting Z-packs and nebulizer treatments from on-site medical. Guys were taking time off, and no one ever does that in the middle of an outage [a 7/12 paycheck is usually around $3200]. My husband and I were the only 2 that did not get sick. This outage was typical of the other outages with the exception that there was not as many pipefitters on the job, 18 on days and 18 on nights.

We went down to Turkey Point to work the outage there right after PSL. There were few people on the job, only about 8 guys on nights and 10 on days [this was around the time that the NRC sent out a letter about critical essential workers and their changing policies (CISA, 2020)]. BHI set up smaller break tents outside that would have no more than 6 people in each one, and morning stretches were done outside instead of in the break room. Temperature checks were being conducted outside the gate before anyone could go through the security checkpoint. If you had a fever, they sent you home. As the first week moved into the second week, several craft members were sick with covid. At one point, there were ten out in one week. There was not a heavy project load for this outage, only the necessary refuel and repairs were done, all others were pushed back. My husband and I opted to take a layoff as soon as they became available at the beginning of April 2020. I opted to stay home and collect unemployment and take care of the kids because of the
school closures, my husband went on to another go round at Vogtle. And three months later, he went on to Shell.

**Shell Chemical Plant: The Cracker Monaca, PA**

I arrived at the Shell Chemical plant on January 24, 2021. The first thing you did at the cracker, a plant that removes ethane from gas to form ethylene, a process Shell calls “cracking” gas, was drive up and wait in line at the covid drive through center. Everyone was tested for covid, and had to pass, before they could continue on with the hiring process. After passing the test, I continued to the assigned practical and meetings. I was placed on a crew that was doing fitter work with welders. It was snowing most of the time but there were warm-up tents that we could use to stay warm between tasks. About one month after I was hired, everyone was transferred out to other crews. I was sent to the bore-scope crew, this crew sent cameras down piping to film the inside of the pipe for foreign material and defects.

Our foreman, “Crouton”, did not care about safety or his crew. He would send us out to the top of a pipe rack about 5 stories up, without looking to see if there was light in the area [we were on night shift] or call a crane to drop our tools at the top [we usually had about 75 lbs. of tools, plus a spool of cable for the camera and a stiff cable to guide the camera]. We would have to carry this stuff all the way to the top of the deck every shift and back down. We would scope piping systems 3 or four times for no reason other than we needed something to do. One night the safety woman yelled at “Crouton” because there was no light, he tried to say that we had a handheld light, and she told him that you need to set up lighting with the electricians because a handheld light is not sufficient.

The worst event was a situation in which it had been snowing, and our crew was supposed to go up into the quencher tower, which was 350’ to the top. There were ladders that wrapped
around the tower, and we had to use a wagon wheel with a rope to hoist all of our tools up to the top. On this day, I said no, and none of the other crew members would go up. I talked with the “Super-super”, a local who had been given three stripes [GF’s have two stripes, foreman have 1, his three stripe was a farce], and he said that tower was usually only accessed by day shift. We ended up climbing the tower the following week, I said something about needing lighting, and getting blown off. “Crouton” actually asked me “have you been up there” to which I said ‘yes, have you’ knowing full well that he had not because he did not walk any of his jobs down before sending his crews out to work them. Walking your jobs down is actually an important part of being a foreman; how do you know if the area is safe, or the job task is actually doable if you do not put eyes on it? I then spent two hours going from the bottom of the tower, all the way to the top of the tower, hoisting all the tools and equipment as I went, because only one other crewman was not afraid of heights. He went up first to disconnect the loads as we were moving them up the tower.

There was an incident with one of the guys on the crew “Texas”. He had gotten sick and went to the doctor for some meds. He had gone up to the top of the tower, even though he was told to stay at the bottom because he was not feeling well [he was told it was not covid by the company doctor]. We had come down and he was not feeling well, he had severe cold chills and could not stop shaking. I took him over to the heaters to warm up, he was still shaking even though I was sweating my ass off, then he started walking away and telling me he could not breathe. I had to call the foreman “Crouton” on the way to on-site medical because no one was supposed to go there without a foreman calling. I got “Texas” to medical, but then had to talk to “Crouton”. I saw Texas inside the ambulance, I never saw him get in, he then got out and walked away, telling the medics that he did not “need to go” like he left the job. I was not at work for the weekend because I was doing my college finals. I came back to work on Tuesday, and the guys on the crew told me that
they had just found “Texas” in his camper at the kitchen table, he had died on Saturday April 24, 2021, no one found him until Tuesday. I was the last person that talked to him.

Shell was building this plant to bring in the chemicals to make plastic pellets that would be sent to companies to make plastic bottles. They spent millions of dollars to remediate the area before construction began. This site had a history of industrial contamination. Shell took out what they could and topped the rest, which means that they removed as much contaminated soil and debris as was possible, then trucked in a bunch of fill dirt until there was a sufficient layer of uncontaminated soil in which to start the foundation. Shell also received tax incentives from the township and the state. I remember Shell talking about how they had this zero carbons footprint goal, because they consider themselves carbon free even though they sold fuel to carbon producing industries. I also wondered if they were going to be part of the solution for reclaiming all these plastic bottles that were being produced from all their plastic pellets, that would inevitably end up as microplastics in the environment. I left this job at the end of May 2021, the guys on my crew gave me a going away card with cash for my Bachelor’s graduation and master’s degree. This would be the single most thoughtful gift from a crew I had worked with on a job.

**Port St. Lucie Fall Outage 2022.**

I was hired in for BHI on August 23, 2022. This outage was different from the Spring outage: the covid testing tent was not here and they were not testing for covid as soon as people came in before processing. We were all being herded into the processing tent like cattle. There were more people here than the last two outages. New people having to start fresh with red badging, a few of us regulars. I started getting a fever on Thursday [August 25], and by Friday I tested positive for covid. I have not had covid since January 2020. No one here was required to disclose
that they had covid, although FP&L will terminate employees who are knowingly sick and continue to work in containment.

I was put on the FAC and snubber crew with “Ice Cream Social”, “Toolbox.” and a couple of the welders that did not get put on any welds during this outage. “Ice Cream Social” was the foreman because “Toolbox” got into an argument with the GF “Tacklebox.” They are related and this happens every outage. There were a few events that occurred this outage: “Toolbox” fell and injured his knee while trying to remove/move a snubber [we do not have the right tools for the job, so the “tool” is usually a big guy power lifting]; “Ice Cream Social” fell out, meaning he passed out inside containment and had to go to the hospital, and “Toolbox” informed me that the “Budda” valve had been water hammered, and the crew needed to clean the support welds and penetration welds for x-ray to make sure there was no damage. I got laid off September 22, 2022.

Read Chapter Five: An example of Corporate Leadership’s Role in Complacency

My Last Nuclear Job River Bend Nuclear Station St. Francisville, LA

My husband and I started at the River Bend, Louisiana nuclear generating station on May 1, 2023. We were working for Williams Industrial Services Group, which was filing for chapter 11 and sold around this time. We had just completed the Turkey Point outage and were doing all the in-processing requirements for River Bend. We had never been to this plant, and it was the first for us that required an eye scan for entry into the plant. Part of the process here was to complete an on-board meeting with the plant manager. During this meeting, the plant manager proceeded to describe how River Bend had always been proud of their fast outage turnarounds to get the plant up and running quickly. They had 14-day shutdowns, quicker than most nukes that I had been on. This time, the plant had been shut down for over 90 days and would not be back up for another month.
The plant manager discussed how these short turnarounds had caused the forced shutdown that they were currently in. The plant’s condenser tubes had been destroyed in a defective condenser unit from the original installation, that was never repaired. Condensers are heat exchangers, where steam on one side of the condenser is pushed through the tubes, and into a water box [a box full of collected water] on the other side of the tubes. The tubes go horizontally through a plate, which looks very much like a big metal honeycomb. The water circulates back and forth, heated water from fission being cooled back down. If the tubes are damaged or misaligned, the steam/water cannot transition through the tubing and cannot cool the water back down properly. The subsequent shutdowns did not address the situation. The lack of due diligence on the part of plant managers and licensees created the forced shutdown. This was the first time that I had ever heard a nuclear plant manager admit that fast turnarounds and money saved on these short outages [which inevitably included bonus money], resulted in the now costly and timely repairs to the unit. I was terminated [this is an incredibly sore subject for me that I am not discussing] on May 9, 2023, and my husband was laid off on May 18, 2023.

Because we were so close to New Orleans, we decided to take a few days and visit the city. This was my chance to check New Orleans off my “things to do” list. We stayed at the Olivier House Hotel on Toulouse, watched the jazz band march down the street, took the voodoo tour with Nu’Awnons Nate, ate beignets, and drank coffee at Café du Monde, dined at the Market Café overlooking Decatur, and went to a burlesque show at the Burgundy Bar. It was the best time ever. I will never come back here to work, but I would come back for New Orleans.

**Eli Lilly and the TZP2 Project**

June 30, 2023, my husband, and I got a call out for a 6/12 schedule at the Eli Lilly TZP2 project in Indianapolis, Indiana. We went through the hire-in process and found out that the two of
us were going to work the maintenance side of the pharmaceutical company. We had never worked at a pharmaceutical job before, so the process, while not too much different from nuclear, was an adjustment. To enter an area that is still in production, it is necessary to dress out, you do not need to take your street clothes off, you must wear a hair net [moustache and beard net], booties and a jump suit. The piping in pharmaceuticals is generally small bore [less than 4” in diameter and sched. 10 or .049 of an inch], and not meant for high pressure. Most everything is orbital welding, a machine welding with a computer program, instead of the traditional hand welded style. This is the first place that I have been where epoxying a PVC or plastic pipe joint is called “chemical welding;” this is a new term for me because this would be plumbing work in my jurisdiction.

Most of the crew had a good relationship with each other except for a couple of guys, “Joe” and “Peppermint”. “Joe” was from California but moved to a southern state because he was a hard-core Trump supporter, anti-abortion advocate, ant-LGBTQ+, and a gun rights with no limits guy. I could have cared less what his views were, except for the fact that he was a union guy, and union guys are not supposed to talk politics on the job. And he was quite vocal about his position. “Peppermint” was a book buyer, meaning he bought his union book, which most people do not like, on top of the fact that he had not learned much about the piping trades up to this point in time. He was also an addict who was going through treatment, along with being a progressive thinker, which made him a target of most of the crew. There was nothing difficult about this job, most of it was avoiding people to avoid conflict.

There was a specific event that happened before the crew was separated out and placed on the new construction of the TZP2 project. The crew was assigned to remove a high-pressure valve and replace it with a new valve. The plant management oversaw making sure the systems connected to the valve were closed, the crew was running hose to the line, the liquids were caustic but diluted,
were to be drained, then the valve was safe to remove. There was minimal pressure and almost no flow in the hose, the crew said multiple times that the line had not been purged properly. We were not going to remove the valve until we were sure, eventually the manager walked down the lines with the crew, we found another valve that needed to be closed, and the line was finally purged. After the valve was replaced in the system, the manager turned the whole system on without throttling the valves. This means opening the valves slowly, one at a time and allowing the pressure to build back up to full operating capacity. The system hammered, which means that the force of the pressure coming through the system all at once caused the lines to slam and move violently. When this happens, welded joints can break, bolted joints can come apart, and instrumentation can be damaged. The manager did not follow proper protocols when opening the lines and did not inform anyone in the vicinity that the line was coming back on-line. This is also an important factor because if a system is being tested or coming back on-line, unnecessary personnel are evacuated from the area until all systems are on-line and functioning properly.

The TZP2 project at Eli Lilly is the new pharmaceutical line for the weight loss drug tirzepatide. This line was all new construction, new buildings, new lines, new product. Here, too, there were issues with Freemasons, as they were the quality control, safety, stewards, the foremen, the GF’s, the supervision. If you were not a Freemason, you were not treated “badly” but you were put on the work that no one else wanted or fired or laid-off quickly. Racism was obvious here too, as the quality control guy would tell the black welders that their welds needed rework, and the safety guy would nail them for glove wear or not wearing safety glasses while welding.

The first task after being transferred was completing a walkway around the ventilation fans. This is not fitter work, but there were no ironworkers or sheet metal guys on the job. This job also “required” that everyone participate in their safety incentive program, which meant that they would
harass you about filling out a card that identified the location of a hazard. This essentially called out someone for a safety violation. It also put money in the pockets of the steward and all those in leadership positions. And when I say harass, I mean that they would ask you daily for these cards and tell you that they were a requirement [even though legally it is not], but with the backing of the steward, you were on your own in fighting it. We left this job the day “Toolbox” was fired for not leading the men on the crew for the task of the day [he was not a foreman or a lead guy]. We drug up August 16, 2023.

There is nothing to do here in Indianapolis. My husband and I stayed in the city because we were trying to see if we could get on at another job about an hour away. We had also paid for our camper spot for the entire month of August, campgrounds do not give refunds, so it is better to stay and see if you can find another job. This hall has four business agents [most have one, or two if there is a large project], they also have a call in line to find out what jobs are available [this is more like soliciting your own work], and if they do not want you on a job, the BA will not call you back to tell you that it is available. They will also put you on a 40-hour schedule and send one of the local hands out to the money-making jobs. I am not traveling to make a 40-hour paycheck. The Indianapolis local also makes you pay their local assessment, which is $200 a paycheck, plus you pay township tax and state tax along with federal. I will never work in Indiana again.

My Last Job as a Pipefitter: Blue Oval Battery Plant Memphis Tennessee

My husband and I received a call from our BA “Harley” and told us to show up for D&Z on September 11, 2023, at the Blue Oval project. We packed our stuff and drove to Tennessee, found a campground close to the job, and paid the $1000 to camp for the month. We received an email from the Memphis BA “Sitcom” for the show-up date, and we drove back home to see the kids before we started the job. We then received a follow up email that stated only welders were hiring in on that
date and our fitter call had been canceled. Our local 630 friend “Winchester” was one of the welders that hired in on that day. My husband and I both called “Harley” to tell him what happened, and that we were pissed because we just paid $1000 for a camp site and now, we do not have a job. “Harley” called that BA, “Sitcom”, and read him the riot act because that BA had needed welders, and pulled welders from our hall to fill his welder calls for the job. “Now I have two fitters without a job who spent their last dime to man your job”!

I then received a call from “Sitcom”, who gave us a new call out date for September 18 and a new contractor Kinetics. I was also informed that the job was for three months and that once we were finished with Kinetics, we could transfer over to D&Z. I called “Harley” to tell him the news and he was happy that we had the job but felt bad for putting us in the middle of their business. My husband and I then did the preliminary safety course work and on-board videos of the job. Once we drove back to Memphis, we went to the designated clinic for our drug test.

Once on the job on September 18, as new hires, we filled out w2’s, direct deposit forms, watched safety videos, learned about safe escape routes for active shooter events, and received our PPE for the job. My husband and I were then assigned to the night shift crew and told to come in at 15:00 the following day and meet with our new foreman “Weasel”. There were four welders, three fitters [including my husband and myself], and the foreman on this crew. There was also a supervisor that worked for Harris “Jive Turkey”, who I would later realize was a snake in the grass, much like I discovered “Weasel” was a snake in the grass.

Night shift had only just started, and more hire-ins were coming. But no more than 20 people total were desired on the crews because Kinetics [or the hall or the guys] did not want to have a safety guy on nights or a shop stew on nights. If there were more than 20 people, that was what would happen. So, all the unsafe things going on here [not having an operator, not cleaning the
area, not using spotters, not using adequate barricades, etc.] would stop. Not to mention the poor lighting to get to the portolets, and the early outs.

At the beginning of my second week, a fire broke out across the road, just down from the offices and the lunch/safety tent. The fuel truck had come by to refill all the equipment which includes the generators, track hoes, back hoes and portable fuel tanks for equipment refuels. The fuel truck had fueled up a large generator, one that was designed to be pulled behind a truck, it must have been running when they refilled it (or a large amount of fuel was spilled around it) because it caught fire. It burned for most of the day, the tires melted off, and a track hoe (excavator) operator was continually dumping dirt on the fire to put it out while the fire department was hosing the fire down with water. The fire was eventually extinguished, and no safety meeting was held regarding the incident.

My husband and I were told to wire wheel rusted fittings to get all the rust off and spray paint them black. I requested masks, I was given a covid mask, I told the foreman that I needed N-95’s for this type of work. We were supposed to be in an open, and well-ventilated area to do this work, but we were not. We were inside a building with no exhaust fans. We did have fans, but we also only had one spider box [electrical box to connect power cords to, which is connected to a main temporary power source] that would blow the main breaker on the temp power if too many tools were plugged into it. This was exactly what happened when we tried to use a corded grinder and a fan to blow out the dust and fumes. We switched to a battery powered grinder, the battery did not last long, and we rotated batteries out every 15 minutes. We had 4 batteries at any given time on the charger, the battery powered grinder disappeared shortly after we used it.

Rumor was that Kinetics is about ready to get kicked off this job for lack of production. There are also issues with weld quality and x-rays for welded pipe indicating lack of fusion or
porosity. Things like this are common in the trade and usually a welder will get looked-out on their weld [meaning an inspector does not like the way the weld “looks”, there may not be anything wrong with the weld, but he will bust his test], sometimes an x-ray comes back and there is a shadow, so they get busted back because this is a lack of fusion. Weld inspectors and the companies they work for often get paid by the person welding or testing out. The more welders they get in to test, the more money the company makes. It is in their best interest to bust a welder and get another welder in to test. Or maybe there are some politics involved, the weld inspector is busting out welders for one contractor to favor another. Sometimes the welder moves to a fitter slot [which is what contractors want because then they do not have to lose money on the person they already have on site, and they do not have to make callouts to have more fitters coming in]. On this job, we all have a six-digit hire in number, if we leave, or the subcontracted company [Kinetics] gets booted off the job, that number has us in the system already, and we do not have to do any in-processing [which saves the contractor money], we just go out to the new subcontracted company [a change of hard hats].

Safety works much the same way. There are safety people all the way around from the main contractor to the subcontractor, and there are multiple subcontractors. An example of an issue that took place here was an electrician supervisor stating that someone on our crew [we have 3 sets of 3 workers in lifts throughout our area] did not have their red tape barrier up or a spotter. My group did, as we have been around a time or two and do not trust the system. That supervisor goes to their safety, then their safety comes to our safety, or perhaps their safety goes to the main contractor safety, then to our safety, then the foreman comes to us. The end result, many times, is a termination of the worker. Sometimes there is a write-up, it just depends on what the infraction was or is at that specific site. These are all games that are played. Safety bonuses for a supervisor are a
real thing. If there are no safety infractions, then the supervisor makes a bonus for zero safety issues or lost time incidents. This would seem counterintuitive to the previous information about foremen, safety or supervisors wanting to write-up and terminate workers, but there is also the bonus that comes with saving money and being under budget.

This Blue Oval job, at least as far as the subcontractor Kinetics was concerned, and Harris [or Wallbridge] as the contractors, doled out safety PPE [personal protective equipment like gloves, safety glasses, vests] on an as needed basis. I had to ask to get a pair of gloves every time I needed them. And my size had to be ordered because I am a small-extra small. Usually, there is a tool crib or a communal area in which to get these items, but not here. Money is “saved” because these consumables [because they are personal use and disposable] are not handed out willy-nilly. We were told that tools were also readily available, but we were borrowing harnesses [which is a no-no, we are all supposed to have our own], the safety tether on the harnesses were always borrowed from the other shift [we had to wait for them to leave to get them, which was another issue: you cannot work safely without a tether, so you work without one if the work has to start now], there were only a select number of grinders, there were only 3 battery powered fans [no one knew where they were hidden], limited or no flashlights and head lamps, limited number of levels levels [some of them broken]. And, as I said before, only so many power tools could be plugged in at one time because the temporary power would blow. Day shift and other contractors had generators that were for their own crew use.

I worked in the building, on the top floor, but you would never know it judging by the condition of the place. It was such a mess, spent water bottles all over the place, dirt and caked on mud from outside the building on the floor and piping, welding rods and weld slag, food wrappers, chewing tobacco spit. No one cleaned their areas, the apprentices were supposed to do that but do
not, the journeymen should, as part of craftsmanship and safety, but do not. There were no laborers out here, there are supposed to be, but I have not seen them. Trash was piled up at the trash shoots, and all over the decks.

It has been 4 days and port-o-lets, “shitters”, here are disgusting. The port-o-lets are supposed to be cleaned out every other day according to TOSHA [Tennessee OSHA]. They were not doing that here. I have taken pictures of the women’s shitter that was in our area. Men have been using the women’s port-o-let: pee on the floor by the urinal, actual visual confirmation of men in the john, writing on the wall from women telling the men they are “disgusting” and to “respect women” then a derogatory response to a woman’s odor. The lock that was supposed to be on the door had been missing since I got here 3 weeks ago. There was a port-o-let on the north side of the building but there is no light tower to see your way around. I had brought this issue up to the GF, “Lake” at every kickoff meeting we have before the start of shift. The one thing to understand here is that most contractors have a desire to do more or better than the OSHA standards. By surpassing the OSHA standards, they eliminate unnecessary complaints and inspections, and can focus on other problems on the job [supply chain issues, manpower, benchmarks].

There is a drain line running outside the building we worked in, underground, bisecting the area the crew used to access the work van [This area is not paved, all dirt, pitted, and not level]. There was a 14” piping system running underground, with no lid or cover over the drain, just an uncovered hole with a safety cone next to it. It was dark out, I did not have a head lamp, and the lighting that was out there cast shadows. I brought this up to the foreman “Weasel” who gave me an attitude. Just another example of locals not working on larger projects, taking these hazards for granted, and not addressing and mitigating them.
There was an incident with one of the guys, “Fencepost,” I was working with, over someone peeing in a valve that was being installed by “Fencepost”. It was reported and the next day, at the morning kickoff, “Lake” was mad and all about firing the person that did it. I said, “what about the port-o-let situation, I have to walk and sit in piss to use the shitter.” He did not have time to hear that. “Fencepost” became a foreman, and shortly after that, pulled out write-ups for my husband and myself for not being in our work area and not working. I refused to sign. I stated that this was retaliation for the port-o-let issues, and “Fencepost” agreed because he was not the one who wrote us up. There was a stew, “Caddy”, that showed up around this time and he stated that he felt it was retaliation because he had not seen us not working. During this entire process, “Jive Turkey” would continually watch me, making any excuse to state an infraction.

Another issue here was the fact that the GF and others were ring wearing Freemason’s, and they did not like being shown up, especially by a female. November 9, the crew got a QR code to report safety issues to Walbridge [the main contractor above Harris, which was above Kinetics], which we all did to complain about the port-o-lets. This was in the middle of October. By the time November rolled around, there were still issues with the port-o-lets, to the point they were overfull, and “Lake’s” comment was “It’s better than shittin’ in your britches”. The following week was Thanksgiving, and we all went home for the holidays. The first week back in December, the port-o-lets had not been cleaned, the excuse was that they did not have access to them to clean. This issue took priority over all others because it was the one issue that made the job horrible.

I had finally had enough, and on December 5, 2023, I made a report to TOSHA. They responded within a few hours and started the investigation. This was the first time that I had ever had to call OSHA, normally, contractors do everything they can to provide male and female port-o-lets and ensure their cleanliness. They also make sure that men do not use the women’s pot-o-lets
and will fire the ones that do. But not here. TOSHA had also suggested that I contact the EEOC because some of my issues sounded like harassment and retaliation. My last day on this job was December 20, 2023. I received a letter of case closure after compliance from Kinetics on December 26, 2023. As of January 8, 2024, both “Lake” and another supervisor “Chevy” had been removed from the job.
CHAPTER FOUR: SURVEYS AND INTERVIEWS AS QUALITATIVE RESEARCH IN INDUSTRY

The following information was collected from piping trades craft personnel either actively working at a construction site, retired from the trade, or employed by a union hall. Many survey questions have multiple response options and multiple responses are recorded. N/A answers are those that the survey respondents did not answer. Any unanswered or N/A’s are not included in the percentage number calculations for those questions that have an N/A response. Table 2 is the continuation of Table 1 because there was too much information to include in one complete table. The survey is included in the appendix so that each question and response option can be read in its entirety [Appendix C].

Surveys and Interviews Background

The surveys on industrial safety and complacency were distributed and returned between November 6, 2023, and January 17, 2024. Participants were asked if they wanted to take part in the survey and told that they would remain anonymous. Because no personal information [names, numbers, e-mails] would be taken and more information than required would have been needed for a consent form, the UCF IRB did not require a consent form from participants [Appendix A]. Participants had the opportunity to have a follow-up interview if they accepted the request. Although not explicitly stated or required in the survey information, as the principal investigator and a female pipefitter working in the trade, I did distribute surveys to craft members to include all available demographics in the piping trades in my vicinity.
Surveys were distributed during my Blue Oval City Battery Plant stay in Memphis, Tennessee, between November 6, 2023’ and January 17, 2024. Many of the participants were craft people that had worked on other jobsites and at industries that I had also worked. Participants were not from any one specific contractor or one specific union hall, nor were they entirely local residents from the surrounding area. Some survey participants that also agreed to interviews, had taken themselves out of retirement to work the Blue Oval job, and some were still newly retired. Most participants were 30 to 55 years of age and had families to support.

Due to my gatekeeper status, and the fact that I am on many Facebook groups associated with union affiliations, I was able to approach all of the pipefitters in my vicinity, most familiar with me and I asked if they wanted to fill out the anonymous survey. Surveys were given to participants to take with them and fill out wherever they felt comfortable. Surveys were handed out 3 at a time at the beginning of the week to allow time for review of the surveys as they were returned, and to avoid being inundated with surveys at one time. One participant took the survey home to fill out, two participants agreed to take the survey and interview off site, the remaining 12 participants filled out the survey on their breaks or lunch.

Of the pipefitters approached to participate, four refused outright, multiple pipefitters stated that they would participate but ultimately did not. The pipefitters that outright refused, gave the reason that they “did not need to be a part of a safety survey”, “that ain’t for me” or “no”. Of the pipefitters that did not participate, there is an assumption that there was a fear of retaliation or identification, as I am personally aware of other authors that have had to remove craft participants from their research when the participant felt that they could easily be identified even with anonymity.
Seven participants agreed to an interview to expand on their answers. Interviews were conducted either before work, or on a break, all were conducted one on one, except for survey #104, who did not care if other craft personnel were in the vicinity while discussing his responses. Participants did have the option to include additional information to the survey without having to complete an interview. Even though this research did not require a consent form, and identifiers were not present on the surveys or interviews, information was kept confidential, and surveys were stored in a lock box and the key kept on my person. Surveys with interviews were scanned into a secured computer for data retrieval purposes.

While most responses fell within the expected percentages for the diversity available, as well as the location for pipefitter respondents employed on a union job site, there were several outcomes that were unexpected. Question #10 asked: *Of the following, which do you feel has the most control over safety?* a. Management/Leadership, b. Craft personnel, c. Organization affiliations, d. Policies and procedures, e. Other.

Zero replied that “c. Organization affiliations had the most control over safety”. I found this to be both shocking and enlightening. Everyone surveyed indicated that they were in the union, with 80% completing a union apprenticeship program, at least two of those interviewed were Freemason members. As a union member that went through the apprenticeship program, I learned the history of unions, the reasons behind the formation of unions along with the reinforcement of safety in the Knights of Labor and AFL-CIO; add to this, the Freemasons whose self-disciplined members were needed in industry, and you get a clear picture of why unions are needed. For an organization that was formed around the desire to create safer working conditions and one that requires OSHA compliance and awareness from its members, along with alliances to the AFL-CIO, the union, at least regarding its union members, does not hold itself to task for safety.
Question #15 asked: Have you ever manned a job in which maintenance/operations management, “the customer” (not your craft/contractor), has requested that your craft/contractor complete repairs or maintenance originally designated as a customer or plant-based facility activity/repair? a. Yes, b. No, c. Prefer not to answer, d. I don’t know. 100% of the survey respondents stated, “a. Yes” to this question. While 66.7% responded “a. Yes” and “33.3% did not know”, to the follow-up Question # 16: Do you feel that there has been an increase in the number of customer/plant/facilities designated repairs or activities being diverted to the craft during scheduled shutdown maintenance and projects? Do these responses mean that customers are no longer carrying enough maintenance personnel to do the maintenance work? Or do these responses mean that the customer will utilize the non-customer craft personnel to complete work “to get their monies worth” out of the craft during shutdowns?

Additionally, on Question #11: Do you feel that there has been an increase in complacency in the construction industry since you entered the trade? 66.7 percent indicates “yes”, and 33.3 indicated “no”. Of the “yes” respondents, 50 % said that complacency was due to “a. a lack of experience or education”, 20% said that it was “c. greed”, 20% said that it was due to “e. a lack of manpower”, 10% thought that it was “f. all of the above”, and 40% listed “h. other [pencil whipping things, time pressure, training prior to job, competition in the work force union vs non, limited jobs, economic stress]”. Aside from the 1 respondent that stated, “f. all of the above”, no other respondents indicated “h. nepotism or d. organizational affiliations”, as reasons for complacency. Does the fact that many union members gain access to the union or Freemasons through family members or friends lead respondents to negate “nepotism” and “organizational affiliations” in causes of complacency?
Table 1: Surveys and responses (15 survey takers and questions 1-10).

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<tr>
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<th>Q #2</th>
<th>Q #3</th>
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Table 2: Surveys and responses (15 survey takers and questions 11-21).

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Table 3: Responses to survey questions [Q 1-21] and answers [a-j]. Each answer is a percentage based on total responses indicated and exclude N/A’s from Tables 1 and 2.

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Results of Surveys and Interviews

This research could have easily focused on the sexism and racism that permeates the construction trades and industries that require skilled labor for production. The intersectionality inherent to gender, nationality, age, and social status, are all intertwined and inform my experiences and perceptions (Launius & Hassel, *Chapter 4: Intersectionality*, 2018). Just as the survey takers and interviewees of this research have their own unique identities and knowledge that imprint on their experiences within industrial safety culture. Where a person comes from, where they are educated,
the jobs that they have worked, the culture of their work environments, all play a role in whether the individual can recognize complacency and safety issues. If multiple people working in the field have exposure to a lack of safety, and they can pinpoint this lack of safety to a set of variables, the unique involvement of the individual can bring nuance to the research but can also validate the research as a collective whole experience.

This nuance is illustrated not only with surveys but also in the comments made during the follow-up interviews. The survey #104 participant felt that the union was an organizational affiliation that interfered with or affected quality craftsmanship, even though a union member, because “I was not hired in by the union. My check says Kinetics. I work for who? Kinetics”. When asked the same question about Freemason organization affiliation, the response was “I plead the fifth”. To be clear #104 was a ring wearing and open Freemason. A comment made by another participant in proximity was that “I cannot go to a job in South Carolina because they are only taking Freemasons right now”. The #104 participant commented “well I can’t argue that the man in the organization [Freemason] is going to stay on a job, the one that is not, will get laid off”. This interview and discussion supported the experiences that I have had with attaining and maintaining employment on several jobs where Freemasons are involved. These experiences also similarly affected other survey takers who felt nepotism was more of an issue. Survey #105 felt that “nepotism was the biggest problem”, #109 felt that “nepotism contributed to the lack of safety”, and #110 listed organizational affiliation and nepotism as negatively affecting work quality or craftsmanship: “why did I pay attention in school?”.

Asking craftspeople who has the most control over safety, is kind of like asking which came first, the chicken or the egg? You have just as many people answering management and leadership as you do craft personnel. Survey #110 believes that craft personnel have the most control because
“management is worried about [filling their own] pockets and getting the job done, personal agendas”. Survey #108 believes, along with policy and procedures, that as the craft “we are there all the time, we are the ones doing the work, the safety person is only there 10% of the time, we have 100% say in [our] safety. If leadership is pushing to do something unsafe, then the craft has to make a choice: push to reprimand the supervisor or do what he says because you are job scared”. [This is where safety culture differs between nuclear, fossil fuels, papermill, etc.]. Survey # 104 believes that “management, the employer, has sole responsibility over safety because they implement rules of safety procedures, craft does not implement rules, if you break the rules, you get fired”. Survey # 105 felt that management and leadership was responsible but stated that they “make it safe or unsafe-a double standard- if [ a hot job] has to get done and you don’t get it done, ‘call me every 30 minutes and tell me why it’s not done [but do it anyway]’. Safety is a double standard, a new straw boss that uses racism, intimidation, and sexism to turn safety into a tool” [for production or politics]. Survey #109 felt it was both management and craft personnel who had the most control over safety, while survey #113 felt it was a combination of management, craft personnel, and policies and procedures that made it safe.

The issue of manpower is a similarly loaded question, one which often depends on where the person is working and how large the project is in relation to other jobs. There are some jobs that no one wants to work based on the nature of the work, union involvement, the reputation of the contractor, or inability to pass the background check to get the job. Survey # 108, who was not a nuclear worker, had experienced jobs that diverted work to the craft and had more than 5 deferred repairs in the last shutdown [papermill] but did not feel that a lack of manpower contributed to the delayed or differed work. “Lack of planning is the main contributor, more planning and preparation, if we had things in front of us, we would do it” [#108]. Survey # 106, who is a retired nuclear
worker, felt that “lack of manpower contributed to deferred repairs, which is the result of leadership wanting to trim back 10%: ‘10 men will do but we can handle it with 9’. We used to have 45 [workers on] nights/45 days, a light outage [nuclear] would have been 35/35, then, it went down to 22 or 20. [Deferred repairs happen because] of cost of material and lack of material. Break open a system that they hadn’t contemplated needing the materials for and can’t get the materials for another month. Poor planning”. Survey #105, who is a nuclear worker, experienced similar deferred repairs and diverted work as survey #106, also felt that the lack of manpower was due to the customer or plant management refusing to hire enough workers but also that the “lack of maintenance” contributed to dangerous work conditions and a lack of safety. Survey #109, also a nuclear worker, had the same experiences as #105 and #106, and felt that contractors refusing to hire enough workers resulted in a lack of manpower but also felt that they “micromanaged the work to make their bonus”. Many felt that refinery work was the most dangerous industrial job to have as a craftsperson and that time pressure was a contributing factor to safety.

Additional information gleaned from survey #110 indicated they felt that nuclear was the safest industry due to the perception that “safety enforcement is more strict, a lot more environmental factors with it make you want to do better [because] of the severity of the outcomes. The standards are higher, more enforceable and [there are] federal guidelines”. While at the same time identifying some nuclear plants, “Turkey Point”, along with papermills, as having a lack of work quality or craftsmanship, survey #110 stated that they “didn’t know” if a lack of manpower contributed to delayed or deferred repairs, but did feel that there was “not enough skilled trades, but then there wasn’t any money in the budget, and the supervision was trying to hold out for the money, while giving us half the people, to hold on to more money, while being too worried about
the plant making money, so they skip out on maintenance”. This, in a nutshell, is also how I felt while working at nuclear plants.
CHAPTER FIVE: AN EXAMPLE OF CORPORATE LEADERSHIP’S ROLE IN COMPLACENCY

The Importance of Documentation

In the following example, the Spring 2023 Outage at PSL Nuclear Power Plant is examined. This information is taken from my own experience and conversations that I was privy to during this outage. This example may seem drawn out, but it is necessary to understand the basic lay of the land for the average outage. It is also necessary to understand how conditions are broken down, and complacency is allowed to creep into standard operating conditions. The breaking down of conditions is a combination of safety, working hours, workload, and defined craft tasks, that are not adhered to in accordance with union policies and industry standards, usually initiated by corporate leadership, which then goes down the chain of command. The way in which this example is written, is also an important aspect of documentation: if it becomes necessary to report any form of discrimination and harassment or if you are involved in an incident on the job, you need to have specific details about the daily activities leading up to the investigation. Nuclear follows military time and alphanumeric alphabet due to its government oversight and regulations.

Complacency Example

Nuclear plants, as well as many other industrial facilities, go through periods of maintenance shutdowns. These shutdowns in nuclear facilities are designated as refueling outages. These refueling outages happen every 18 to 24 months per unit, with units alternating in the fall and spring. These time slots coincide with calendar months that historically require less customer power needs. For example, PSL has 2 nuclear reactor units, Unit 1 and Unit 2. A Unit is the concrete and steel structure where the nuclear reactor is housed, where the fission takes place. Unit 1 may get a refuel
in the Spring 2023, then again in the Fall 2024; Unit 2 will follow in Fall 2023 and Spring 2025.

Refueling means there is a replacement of a percentage of control rods for the fission process. These are spent rods or spent fuel, meaning they are not producing enough energy to stay in service. During these scheduled refueling times, other maintenance and repairs are undertaken, the Unit being down for refueling lessens the risk of equipment damage and safety issues. Most times, refueling outages are scheduled so that if one facility or reactor is down for refueling, there is another facility or reactor that is going into a refueling outage right after it. PSL and Turkey Point are examples of this; as soon as the hatch is closed on PSL, the bulk of the manpower goes to Turkey Point to work that outage. Most of the time craft personnel move back and forth between multiple nuclear facilities doing maintenance and repairs. There is usually a skeleton crew, many times a composite crew, that remains on-site for non-reactor-based projects, but they are also there in cases of an emergency shutdown.

We become remarkably familiar with each plant and the processes involved. Each plant is slightly different and there are nuances to maintenance and functionality. It is sort of like comparing classic cars: a 1970 Chevy Chevelle SS and a 1970 Gremlin both have components necessary to make them run, but one has power and style and makes you want to work on it and barrel down the track; the other has an atypical design and features, it is less powerful but it is endearing, it works, and you defend the jeers while driving it. And just like the classic car, many repairs are unique to that specific unit. Older units are not a cookie cutter design, and many component repairs may require individualized customization to return it back to service.

**January 23, 2023, 16:15**

On January 23, 2023, I received a phone call from my hall, Local Union 630. My BA (Business Agent), “Harley” [the GF from PSL in 2015] asked if I wanted to go to Lucie, that the hire-in date
was for February 13, 2023. My red badge was current, and I could go right in. I said, ‘yes’ and he said “super, I will put you on the list”.

January 27, 2023

My BA called me to confirm my hire-in date of February 13, 2023, for PSL. I made motel reservations for the hire-in date of February 13, 2023. I made reservations at the cheapest and closest motel I could find at $700 a week. [WOW].

February 2, 2023, 12:22

I received a text on my phone from BHI Energy at 12:14, messaging me to complete my ePHQ. I messaged back stating that I had not received the ePHQ and sent my email information to resend. The response back to me was to check my SPAM. ‘No, it is not in my spam file.’

This has been an ongoing issue with BHI Energy; I have had no issues with previous contractors. I finally received my BHI Energy background requested for FPL St. Lucie Nuclear Power Plant, completed my PHQ and received my email confirmation of completion at 13:14 pm.

BHI Energy is a subcontractor for FPL. They started out as a service provider of protective clothing and safety for radiological work, got into scaffolding, turbine maintenance, renewable energy, valve services, welding, power distribution, electric, utility and drilling service. It was most recently acquired by Westinghouse in 2022.

Craft personnel are hired by BHI Energy as contract workers to do maintenance and repair. FPL is the owner/operator/licensee of the nuclear plant. Each craft member must pass a background check for BHI and FPL to gain and maintain employment.
February 13, 2023, 06:30, Monday

My house is 2 ½ hours away from the plant. I left at 03:30 am. I arrived at PSL Nuclear Plant. I must make sure that I park in the designated parking lot because FPL will not hesitate to tow your vehicle. I check in with BHI in-processing staff at H [Hotel] tent in front of the main sidewalk for plant entry. The in-processing woman tells me that I am not on the list for today’s in-processing, and that my hire-in date is not until February 15th. Two other pipefitters, who I am very acquainted with, were also told to come back on Wednesday (February 15, 2023). I told the in-processing personnel I would not be able to come in on the 15th because I have a previous appointment. I was scheduled for a February 16th start date.

I went to the motel to reschedule my stay. This place is a dump, it is on the corner of the main highway, hookers are living and working here. The office has bulletproofed glass around it and charges if the towels are missing. Driving back home.

I called my BA at Local 630 at 13:17 and left a message about the date change. BA called me back at 13:45. I told him I was pissed that I had to waste my time and gas on the trip, only to be turned back around for a February 15 start date. He told me that “BHI informed him on Friday, February 10th, that an email would be sent out to craft about the change of date”. The two other pipefitters had received their emails after looking in their spam. I told him that I had no such notification in my regular or spam emails. I also informed the BA that I would not be in on the 15th because I had a previous appointment that I had to keep.

Changes in start dates are typically made based on the BHI manpower projection and the contractor site manager for BHI, who currently happens to be “Mule”, the same “Mule” from the 2015 outage.
February 15, 2023, 08:45, Wednesday

I received a phone call from my BA telling me that he received a call from BHI and that I was not at FPL-PSL for in-processing. I reminded him of our conversation on the 13th and he said, “yes ma’am I remember”. Then he asked who I talked to, which I did not recall, but told him that she typed me into the computer calendar for the 16th. He said he would call back to BHI to refresh their memory.

February 16, 2023, 06:30, Thursday

I made the 2 ½ hour trip from my house to in-processing at PSL for BHI Energy. I turn in my photo ID, social security card and complete my W2 form and initial paperwork, which includes voluntary disability and veteran status, as well as acceptance of BHI expectations as an employee and a handbook. We never actually read the handbook, and now it is an electronic copy instead of an actual handbook. This is where we understand that safety is our responsibility as “the last line of defense”.

Fitness-For-Duty is usually scheduled on a day after the initial processing day. There is a window for taking it, usually 4 hours, and no food or tobacco products can be consumed at least 15 minutes before the test. I also take a breathalyzer. The test is completed at 08:00.

Fire Watch Practical 10:00 a.m. During this practical, a review of how to use a fire extinguisher, and the types of extinguishers to use on distinct types of fires is reviewed. The class is then required to do a practice run at putting out a fire. We used to do a real fire practical, but it has been replaced by the electronic fire practical. There is an electronic screen set up, it looks a lot like a fireplace, and we are given a fire extinguisher that has an electronic signal but no chemical suppressant. We practiced the Pull pin, Aim, Squeeze the trigger, and Sweep techniques. Each person in the class takes turns for the final to qualify. I go up to the fire, I yell “call *3333”, which is the Operations room, I pull
the pin on the extinguisher, I am at the base of the digital fire, I squeeze the trigger, and I sweep. This fire is taking several sweeps and still is not going out. The extinguisher is almost empty, I see the flames die down, then go out. I have completed and passed my practical. I have not had a fire watch practical at this location since 2011, which was a real fire practical.

Completed NANTel [National Academy for Nuclear Training e-Learn-ing] Generic Respirable Crystalline Silica at 10:30 a.m. This is a computer-based training module that serves as an informative learning experience on the hazards of silica, which is usually quartz dust found in concrete, that can be inhaled during concrete drilling. OSHA guidelines are reviewed, along with the proper protective equipment necessary to work with silica, and the effects silica dust has on the lungs and the potential for lung cancer or COPD.

Waiting for security/badging. I have completed all the required training and drug testing necessary for entry, and I am now waiting for security to have my badge ready for pick up.

*The outage kick-off meeting, in which the scope of the shutdown, activities, and time schedule is discussed, is being held inside the gate. This is also when key personnel, i.e., plant site managers, safety, operations managers, etc., introduce themselves. Half of the craft, including myself, are still outside the gate waiting for badge entry. There will not be another meeting, nor will we be informed of the scope of work, unless we ask or are informed upon gate entry or thereafter. Kick-off meetings for past outages have generally been conducted with most craft personnel already badged in, and before the shutdown has started. Ideally, you want your craft present for dissemination of this information.

It is an 8-hour scheduled workday outside the gate, leave time is 15:00.

**February 17, 2023, 06:30, Friday**

At badging office for handprint [scan of hand for turnstile entry into plant] and badge.
Inside gate at 07:00 and proceeded to dosimetry office to pick up my TLD (thermoluminescent dosimeter) [devise that measures total radiation dose for duration of outage while in containment area]. Then I went to MT&E to get a sticker for checking out measuring and test equipment.

07:30 working in the fabrication shop putting supplies and tools together for projects.

12:30 after lunch, there is an OE [Operator Experience] meeting on heat stress and stay times [length of time a person can stay in the containment area under hot conditions]. This means that someone got heat stress and fell out [passed out or got sick and needed to be helped out of containment] on shift today.

13:15 I was talking to another journeyman about injuries on the job in the fabrication shop, when the BHI safety guy came by and expressed concern over the 13 or so injuries that occurred at the previous outage. The response to that concern was that perhaps BHI should hire more people and not work everyone 7/12’s [7 days a week, 12-hour days] and rotate people around to fill a whole in manpower. As far as pipefitters and welders are concerned, there has always been between 60 and seventy crewmen for outages, split evenly between night shift and dayshift. Looking at the numbers for this outage, we have 35 split between two shifts. This would decrease even more with the next outage.  

* This conversation is in reference to the Fall Outage 2022 injury of “Toolbox”, who was working in containment at the time, and hurt his knee. He was working with another foreman, “Ice Cream Social”, who also collapsed in containment that outage, “Ice Cream Social” was then under light duty orders. “Ice Cream Social” is not here this outage. I was on “Ice Cream Social’s” crew for the Fall 2022 outage. “Ice Cream Social” passed away from cancer 6 months later.

14:48 Punched out at 8 hours. There is no weekend work for me or the crew I am on.
February 20, 2023, 06:30, Monday

Unit 1 is running; the protected train is Alpha. This means that Unit 1 is running and supplying power. The “protected train” is the sensitive equipment that is being secured so that the unit stays running without issue. “Alpha” is the “A” system. There are multiple trains, or systems in place, that are back-up systems to keep the units running in case one line or system fails or goes down for repair. Nuclear is like the military, we use the phonetic alphabet to indicate the letter to avoid miscommunication.

Unit 2 is in Mode 5, protected train in Alpha. The Mode is the stage the Unit is in while it is coming down for service. Mode 5 means it is in cold shutdown mode. Mode 6 is the refueling mode.

The above information is part of the report at the start of every shift. The information may change, but it is important to know what Unit is running and what train is protected, along with additional protected equipment information. Posted protected trains may not be the most current, so verification is always required. If work is being done on a system, and inadvertent contact or unverified maintenance is conducted on a system, it can result in serious human security issues.

I am on the FAC [Flow Accelerated Corrosion] crew. I am working 12-hour days. There are two foremen, “Toolbox” and “Old English,” for a 5-man crew today.

*This crew cleans the rust and debris from components on a piping system. These components are usually elbows, tees, valves, heaters, and includes several feet of piping connected to these components. These sections are then inspected using several different methods: x-ray, ultrasound, magnetic, liquid penetrant, etc. This is done to determine the thickness of the metal and levels of degradation. The results determine when the piping system and components will be put on schedule for replacement, and how long the system can be in service before a shutdown for repair or
replacement is needed. They also provide information about the system, if the wear or corrosion is unexpectedly high, there may be an issue with another component in the system.

The crew has completed 6 FAC’s today, 2 of them are reworks. A rework happens when not enough area of the piping has been cleaned, or the humidity has caused the pipe to rust before inspection and requires re-cleaning and preparation.

**February 21, 2023, 06:30, Tuesday**

Unit 1 A  
Unit 2 A  

I am in the shop working with a retiree “Catfish” cutting gaskets for the CCW [component cooling water system]: seven at 30”, two at 6”, and two 2” specialty. I am not sure who my foreman is today.

*At one point in time, the gaskets were made by the manufacturer and sent to the plant, but now they are made in-house. A template from an old gasket is traced out on a large roll of red rubber and then cut out, and holes are punched for bolting. Our gasket cutter does not work, it is old and broken down, and we must use a pair of shears to cut the 1/8” thick material into rounds. The punch kit is old, and the punches need sharpened.*

Worked a 12-hour shift today.

**February 22, 2023, 06:30, Wednesday**

Unit 1 A  
Unit 2 A  

I learned about how to make hydrochloric acid today and its use to remove scale from inside piping. Working with foreman “Old English” today.
Worked 12-hour shift.

**February 23, 2023, 06:30. Thursday**

Unit 1 A  

Unit 2 A  

I am working with “Toolbox” today. We have four FAC locations.  

The shop steward “Donut” asked if anyone wanted to go to Two Rivers nuclear plant at Point Beach, Wisconsin. That outage would start after this outage in March. They want current red badges. I had initially said I would go, but my daughter’s spring break was starting the week of departure, my son was out of town, and my husband was working at Turkey Point. I did not go to the Wisconsin outage.  

*NextEra owns the Two Rivers plant, which also owns FPL plants in Florida.*

Worked a 12-hour day.

**February 24, 2023, 06:30. Friday**

Unit 1 A  

Unit 2 A  

-working with “Toolbox” today.

There is an ongoing debate with the FAC cleaning process. For as long as I have been doing FAC, I have always been told to use a scouring pad and scotch brite to remove rust and debris from piping and components, and a wire brush for heavy spots. Now I am being told, not by “Toolbox” but from other supervision, who has never done this work, that they want a high buff polish on these systems. This is the opposite of common practice, as a high buff polish can interfere with the testing
process used to inspect the piping for deficits. We all push back and refuse to high buff polish piping for FAC.

Worked a 12-hour shift.

**February 25, 2023, 06:30. Saturday**

Unit 1 A

Unit 2 A

Working with “Toolbox” today on FAC locations.

Left at 10 hours to wash clothes.

**February 26, 2023, 06:30, Sunday**

Unit 1 A

Init 2 A

I am working with “Toolbox” today, the crew completed four FAC locations.

Worked a 12-hour shift.

**February 27, 2023, Monday**

I called out sick today. I am feeling extremely tired, but I also must complete assignments for my Seminar in Cultural Anthropology and Theories in Gender Studies courses.

**February 28, 2023, 06:30, Tuesday**

Unit 1 A

Unit 2 A

Working with “Toolbox” and 2 other crewmen on high torque removal of bolting on a flanged valve on feedwater drain pump at 19’-5” elevation.
* High torque is the use of a pneumatic ratchet on bolting to remove the bolting, the torque on this bolting is too high to remove or re-install by manual means.

FPL oversight was complaining about no one being on the pump removing the bolting. The high torque machine was overheating and needed to cool down before continuing. The crew went to get a water break, and to pick up another of our crew members who had come in late [10:00].

As our entire crew was working on removing bolting, FPL oversight took a picture of “Toolbox”, and crew member “Catfish”, sleeping on the job. This was refuted, and a request for the photo evidence was requested, but never materialized. We were then informed that too many guys were working on the bolting removal.

“Toolbox”, and “Rocky”, an apprentice welder, and I, began working on FAC locations.

12:00 Lunch. “Toolbox” got into an argument with “Donut” over leaving early the day before.

“Donut” told Supervisor “Tacklebox” [the “Tacklebox” that was my foreman during the EPU’s] that Foreman “Toolbox” left at 15:00. He did not leave the turbine building until after 16:00.

*Gate logs can be pulled to verify this. Gate logs are logs taken from the turnstile entry into the plant. Your badge information is stored for every entry and exit.

“Rocky” and I have completed 1 FAC in the CAN, 2 FAC’s outside of the CAN and started on two more before leaving for the day.

Worked a 12-hour shift.

**March 1, 2023, 06:30, Wednesday**

Unit 1 A

Unit 2 A

Shop stew not here today.
I was not given a work partner at the start of shift today. Most of the time, the same people are put on the same crews, every day. But some of us are permanent floaters, we are rotated on and off crews and job tasks. Today, I was not assigned to a work partner and my crew is going elsewhere.

“Toolbox” and “Rocky” went into containment to complete FAC locations. “Rocky” was taken off FAC and placed on welding out beam hangers and supports. I do not know who he is working with or if he is with another foreman.

I was then put on with “Toolbox” to complete two FAC’s from the day before, and to complete a FAC from night shift.

11:00 “Toolbox” and “Rocky” were sent to a high rad brief, a brief in which radiological personnel inform you of the hot spots and current conditions in containment, as well as the dress and monitoring devices to be used. I am not working with anyone. The standing policy is that no one works alone, usually we work with a partner from our own craft, but composite crews are becoming all too common. Composite crews are crews made up of more than one craft: a pipefitter, insulator, and electrician, for example. The problem with composite crews is that one trade does not know the other trade's job, we cannot peer check or pull a stop work if things go wrong and we do not know it-short of an injury. How do you question what is being done if you do not know the questions to ask?

12:00 I saw “Toolbox” and he said he was called to take a random drug test right after his brief. The on-site medical is outside the gate, in front of the parking lot. I am not sure what the new policy is but you used to have 4 hours to take a drug test, which includes a urine sample and breathalyzer. “Toolbox” does not return until 15:15.

The welder, “Rocky” is sent into containment by himself. He is an apprentice, and this is not approved of in the union or on the site, apprentices always go with a journeyman. You never go
alone, and you especially do not go alone if you are an apprentice. The welder was then placed with an insulator. An insulator is someone who puts the insulation layer around hot piping, the insulation layer is like a 2” thick chalky sleeve.

I am working in the shop cutting gaskets for intake.

Worked a 12-hour shift.

**March 2, 2023, 06:00, Thursday**

Unit 1 A

Unit 2 A

I am working with “Toolbox” on Fac location recleaning.

We are torquing snubbers, these are 3’ long shock absorbers that look like a giant metal spark plug [snubbers come in assorted sizes depending on the pipe size and need]. There is a pin, or screw, with a nut at the top and a pin, or screw, with a nut at the bottom. They are attached to piping and metal supports to prevent piping from jarring against a structure. One snubber package, a notebook that contains all the information: serial numbers, pin orientation, torque measurement recordings, is missing. The torque wrench for the torquing process has a serial number and service date on it, this must be recorded in the package also. We cannot proceed without this information. A package is required as part of the work scope. Snubbers are evaluated regularly, taken down and recalibrated on every shutdown, especially the ones in containment.

**March 3, 2023, 06:30, Friday**

Unit 1 A

Unit 2 A
I am working with “Toolbox” and one other crew man on Fac locations. We completed three Fac’s, 3 others not complete.

A second crew member “Jock” went home at 9 hours because he was sick.

*The second crew member was in containment when the specialty contractor had to cut out a weld at the 18’ injection valve. Guys inside were coming out with sore throats-these were hex chrome welds. This was discussed at the break table at lunch. The hex-chrome welds require HEPA filters and exhaust venting, or open-air conditions. No announcement of this event was made at the morning meeting, and I do not know if anyone filed a complaint. This is another example of complacency and a willful disregard of human security.

“Toolbox” and I were told to clean the flange at the feedwater pump. We need FME, foreign material exclusion, and paperwork clearances. One supervisor “Tacklebox” said we needed to get the paperwork, the other said “just get in there and do it” [“Buddy”]. This is an FPL maintenance project that was part of their maintenance work [and not a shutdown task] that was “thrown over the fence” or given to outage craft to complete.

I have been informed that there are 28 emergent work items that have been added to our shutdown workload.

I left at 10 hours.

**March 4, 2023, 06:30, Saturday**

Unit 1 A

Unit 2 A

I am working with “Toolbox”, and the apprentice welder “Rocky”, who is on a buildup of a 24” FAC. A build-up is when a welder adds metal to the piping [either inside or outside] for extra
thickness to delay the replacement of the component. We are on a scaffold at 39.5’ elevation. There is an additional fitter “Catfish” acting as fire watch.

14:25 The laborer Foreman came over discussing extinguisher placement. She told “Catfish” that he needed a weld jacket to work within 6’ of the welder. “Catfish” complained “what for”? I told him to come down and get a weld jacket. “What for”? Supervisor “Tacklebox” was there and told him “Yeah, you gotta come down and get a weld jacket. Go see your foreman, he’ll get you one”.

“Catfish” “What for”? Supervisor “Tacklebox” responds, “because a pipefitter caught himself on fire”. The Supervisor leaves and then “Catfish” says to me: “that black bitch is just trying to flex”. I told him to “let her flex, she’s doing her job. The Supervisor was just here, she is with her laborer subordinates, she needs to make sure safety is taken care of, right”? A side note to “Catfish”: he wears his Freemason insignia baseball cap when he is in the break room.

“Catfish” left to get a jacket.

I talked with “Toolbox” about the situation, to which he felt the guy had to go. I talked with my GF “Happy”, who said that he would talk to the guy but would also talk to the stew about the situation.

“Toolbox” and I went to the 19.5’ elevation to hook up an airline for the painters to abate and paint the piping systems. This was the plant air supply. We got a continuous fountain of dirty water coming out of this line, but no air. This is because filters were not changed out at the dryer and water entered the line, corroding the piping system. I am not sure why we are trying to get this thing going, the plant air has been in disrepair for several years, and FP&L has been relying on temporary air compressor units. This is known. I am sure if the county or city inspectors were allowed on site, they would fine them. I was made aware that the city or county [not sure which] sent drones over the site. They condemned six buildings after this inspection, which are being removed after the
outage. Temporary air has become more of a permanent solution because of the cost to replace the plant air, it is cheaper to rent.

I have now been sent to work with two fitters, just a few feet away from the air line, to help them set up weld blinds, [fire-rated plastic that prevents sparks from spraying out everywhere], in a pipe rack about 20’ up on a scaffold. The fitters are cutting out a 14” elbow. There is a new laborer fire watching for them, and she is not familiar with signage and the full extent of red taping off an area for dangerous activities and allowing people to walk through the area. We are also working in an area where painters are abating and painting pipe, a dangerous combination for hot work [grinding and welding] and us, as we are also in the line of fire for high air pressure and air borne debris. I got pissed off and left after one of the pipefitters I was helping said he “knows what he has to do”, and the other fitter said, “I didn’t know we had to put up fire blanket”, then “I didn’t know where to find it”. I am done.

OSHA is not “allowed” on site, meaning they are blockaded, and it is difficult for them to get in. I have never seen OSHA on any job, unless there is a fatality-and this is the only time they really show up-everyone is evacuated off the site. You cannot ask questions if no one is there to ask. The NRC [Nuclear Regulatory Commission] is on nuclear sites, but they seem to care more about craft taking their badges off when they dress out for containment work than anything else, in my experience.

March 5, 2025, 06:30, Sunday

Unit 1 A

Unit 2 A

I am working with “Old English” today. Me and another fitter, “Jock” are running welding cable from a six pack, [a rack with 6 weld machines stacked in 3 groups of two], to the manway entries in
the piping system so that the welder can build up the welds inside the piping. We are also setting up lighting and power cords for grinders.

Left at 12 hours.

**March 6, 2023, Monday**

I called out sick today.

**March 7, 2023, 06:30, Tuesday**

Unit 1 A

Unit 2 A

I was walked down on a job by Supervisor “Tacklebox”. I do not know where my foreman is today. The job task is to cut a bracket from a heater pump. The heater pump is about 25’ long and inserts into the system kind of like a dipstick in your car. Only the top of the heater is visible once it is bolted into place. The bracket is about 24” long and is welded along that 24” to the pump. The metal is exceptionally thick and awkward, it is not easy to use a cutting wheel to grind it off. The fitter that I am working with, “Captain” is exceptionally angry about doing this job with me. In fact, he made a comment to the fire watch, who then told me later how pissed he was. We spent the bulk of the day trying to remove this bracket. Finding power was also difficult. The one grinder that I found kept tripping the breaker, so we could not use it. I had to search for a less powerful one.

*The removal of this bracket is not something that we would normally do. They needed to save it for the new replacement heater because the new heater did not have the bracket and they could not fabricate one.*

Worked a 12-hour shift.
March 8, 2023, 06:30, Wednesday

Unit 1 B

Unit 2 B

Working with “Toolbox” today.

“Toolbox” is also a working foreman today [a foreman that must be on the tools, usually because there are not enough people], he is welding on a support at the intake where the water is pulled into the system for cooling. We need to be on a lock-out box: locks are placed on components to ensure that they are not live, each person involved gets a lock and locks it on a main box, the key that locks the component itself is inside this box, everyone must take their lock off this main box to access the key inside to reenergize the locked-out component. We have also signed onto a clearance. Both of which we were told we did not need to do by Supervisor “Buddy”. We finished the welding, signed off on the clearances and lock box, and were leaving the area when we were approached by an FPL manager who told us, through “Buddy”, to clean up the area. We had rolled back our welding lead and materials but were told to roll back all the lead-from the previous welding jobs that we were not a part of-so that material could be moved.

“Toolbox” and I are now in the fabrication shop working on a snubber.

We continued onward to the heater pump bracket removal that was started the day before.

“Toolbox” is aggravated by the process as we do not have the right tools for the job. BHI does not have the small Dremel cutting disks needed to access the space to cut the bracket off cleanly. FPL’s tool room has long been abandoned for the new Fastenal vending machines that are inaccessible to most of the craft, and rarely supplies the tools necessary for the task at hand. This replacement has eliminated jobs and makes our job more difficult because we now must seek out tools that were traditionally ordered, inspected, and organized, with a sign-in and sign-out process. While searching
for tools, we looked inside the fire pump closet in the North end fabrication shop, there was water flowing all over the floor because of leaking fittings and valves. The plant was aware of this problem.

I left at 12 hours.

**March 9, 2023, 06:30, Thursday**

Unit 1 B

Unit 2 B

“Toolbox” called out of work sick today.

The O-ring on the reactor head, Unit 2, busted out after overfilling while bringing the Unit up to pre-outage levels. This was not a morning announcement, but it was information that was given to the GF “Happy” and “Old English” in the turnover of information from night shift to day shift. The O-ring is what seals the head and the reactor vessel preventing containment water from leaking out. When the unit was being refilled/pressurized, the increase in pressure caused the O-ring to break. The O-ring is designed to provide a seal between the reactor head and the vessel, preventing the water inside the vessel from spilling out into the containment area. Indian Point nuke in New York is an example of a plant that has had continuous O-ring leaks due to seal failures. A spare O-ring was at Turkey Point, and this O-ring was rushed in on a flatbed truck with police escort all the way to PSL.

Working for Foreman “Trash” completing bolt up of flanges and torquing the Christmas tree with two other pipefitters. We call it the Christmas tree because there are vertical pipes that connect to horizontal pipes, it looks like a tree branching out.

Left at 12 hours.
March 10, 2023, 06:30, Friday

Unit 1 B

Unit 2 B

Talked with the stew about needing a layoff because my daughter was going to have spring break next week and no one was home to watch her. I was also going to be unable to go to the Wisconsin job for the same reason. We are at the end of this outage and layoffs have already begun.

“Toolbox” called out.

I am working with “Trash” on cleaning out gang boxes, [big metal toolboxes on wheels], that were returned to the shop. We are also replacing a manhole cover and locking it down.

The Local Union 630 BA, “Harley” stopped by today.

Today is my last day. I did not turn my badge in as I expect to be at Turkey Point Nuclear plant to do their outage in a couple of weeks.
CHAPTER SIX: CONCLUSION

My research sought to address corporate leadership’s role in the evolution of complacency created from a cycle of elevated risk behaviors and reductions in force as they relate to industrial safety and essential critical infrastructure workers. The inclusion of an ethnography allowed for a first-person perspective of events that illustrated and mirrored issues and incidents collected from industrial accidents. Qualitative data from surveys, interviews with craft people and experts in the field, support the ethnographic information provided which bare out the results of corporate leadership’s role in contributing to and expanding on the dangers of complacency and redefining its meaning.

Summary

Even though an event may not be visible to the public, or has not risen to the heights of catastrophe, it does not mean that unsafe acts are not happening, or that critical components are being properly maintained. The degree of human security and safety in industrial facilities is measured against the safety of other competitive energy sources (Denning & Mubayi, 2016). This means that one energy producer, such as natural gas, is measured against another energy producer, such as nuclear energy, if both have relatively the same effect on societal safety, then both have met their goal of protecting the public against critical harm. It does not matter that accidents or incidence occur in each of these sectors, it only matters that one is of no greater risk than the other.

The International Atomic Energy Agency clearly states in their safety guides that they authorize safety standards “for protection of health and minimization of danger to life and property, and to provide for the application of these standards [for protecting people and the environment]” (Agency, 1970, Forward). The United Association [UA] has created a policy to “maintain the highest
standards of excellence in all that we do—in training, maintaining our skills, working safely, being more productive, improving workplace attitudes, and all the other elements that will set us apart from the rest of the pack” (Hite & Kelly, 2006, p. 4). Every contractor has a code of conduct that outlines the standards expected of its employees, if the company standards do not include a concept covered by a customer, the customer’s standards policy with supersede it. Policies and procedures are created to ensure that quality and safety are maintained in the industrial environment.

Just because there is a procedure or policy in place does not necessarily mean that the learned knowledge of the system is transferred to the next generation of workers. This is evident in the complacency and willful disregard for safety exhibited by the two pipe fitters’ unwillingness to follow procedure in putting up fire blanket, [“we have to get the work done now”], and not being “aware” of the painters and fire watch in the area [page 114, March 4, 2023]. This lack of learned knowledge extends up to supervisors and management as well. The willingness of the supervisor, “Buddy”, to order a crew to clean a feedwater flange, which required the package and a safety procedure adherence [page 112, March 3, 2023], or torquing of a snubber without paperwork [page 111, March 2, 2023], or in sending an apprentice welder into containment by himself [pages 110-111, March 1, 2023], would all elicit pushback from those more experienced and aware of procedure and policy. These variances are a red flag and not one that many experienced personnel are willing to chance.

Having procedures or policies in place also does not mean that leadership and management care more about the system functioning than the profit margins. The installation of the Fastenal vending machines reduced the number of FP&L employees on site for tool distribution, ordering, and inspections, not doubt saving money on employee wages and benefits; but how does craft do the task at hand when they do not have the right tools for the job, they do not have a passcode to
access the machines, and the people in charge of the vending machines are not there [pages 116-117, March 8, 2023]? Emergent work items, jobs that were not in our scope of work or part of the outage but have now become our work and are to be completed during the outage, have become common. For example, on the previous outage, a water main for regular water supply [not associated with the units] had burst and needed repair; this was given to outage craft and not FP&L maintenance for repair. There were also 28 additional emergent work items added to this shutdown [page 112, March 3, 2023]. This is an example of craft hired for the outage being parsed out for regular maintenance repairs due to reductions in essential plant personnel. Deferred repairs and maintenance go hand in hand with the manpower problem, if there are not enough workers to do the task, it does not get done. It is evident from the research that poor planning on the part of leadership, in tandem with a lack of manpower, creates an environment where deferred repairs, and diverted work, create a sense of danger and unease in safety among craft personnel, not to mention the potential for actual disaster.

There are several additional factors that undermine the effectiveness of the policies and procedures that are in place at industrial sites. One of these factors is the chain of command and the roles between craft, safety, and oversight. In the hierarchy of nuclear-and union jobs- the foreman is in the position directly above the craft on the tools. This is the person that lines out the crew for the job tasks of the day. The next in line is the GF, each craft has their own GF, and no one tells another craft their job task. The GF lines out the foreman on the task of the day and does not line out the crew unless a foreman is not available, in this case, a crew member is selected to be foreman for the day unless another foreman arrives. Above the GF, is the contractor supervisor [a member of the craft], they oversee assigned job tasks, they work closely with the GF to assign crews and
manpower to complete projects. They can talk to the crew but are not allowed to direct them on activities.

Site management and supervision cannot engage the crew unless there are imminent safety issues, or the shop steward is present. The shop steward is the person who works with the craft when there is an issue like safety, write-ups, and paychecks. The shop steward is required to know the contract and is an advocate for all the craft on site while ensuring that the contractor and customer policies and practices are being adhered to by all personnel, they are not to have personal agendas. Safety personnel are the exception to the chain of command, they can stop and talk directly to craft to enforce safety policies if they see an unsafe act.

On many job sites, but specifically nuclear from personal experience, there is a comfort factor that comes from outage work with a foreman being promoted up to a general foreman, a general foreman being promoted to a supervisor, a supervisor being promoted to an area supervisor, and so on. This leads to confusion and a muddling of authority and the chain of command, as evident in the ethnography [pages 49-50, My second trip out to Port St. Lucie]. Problems arise when the chain of command is not followed and a supervisor or general foreman lines out a crew on a task without benefit of going through the foreman. The people assigned to the task may not know how to do the work, they may not have the requisite qualifications, and the person may unknowingly be doing a task that requires additional safety precautions [refer back to “Buddy”].

Add to this the comments made by survey #109 about how supervision “micromanaged the work to make their bonus” [page 96], and you get a clearer picture of how organizational deficiencies promote complacency in industrial safety. This micromanagement can be elaborated on by including an example of a lead supervisor, “Picasso”, a painter by trade, overseeing pipefitters, who assigned two craft personnel to do a task that had historically been completed by four craft
members, to remove and reinstall a valve [a valve which required one person to control the rigging, 2 people to manipulate the valve into place, and a 4th to act as a backup and observer to ensure proper placement and reduce struck-by incidence]. “Picasso”, who had no pipefitting experience and whose trade experience did not train him for rigging, placement, and installation of a valve, stood by and directed the crew of two to “go ahead and lower the valve, it will fit just fine, don’t worry about it” and “when are we gonna finish this”. One crew member had been on the evolution previously and stated that “this valve needs to be positioned this way, we need a person on rigging, we are going to hit the flange if you lower the valve, the handrails need to be removed”, with “Picasso” stating that “we don’t need to move the rails, it will fit”. The valve hit the rails because it did not fit. Basically, a person who is unskilled in the task, directed skilled labor in how to do the task, while ignoring the trained and skilled personnel completing the task. The task was completed but with less people and more potential for accident, injury, and damage to equipment.

Along with the perceived micromanagement and the lack of piping trade knowledge exhibited by leadership, are the human performance tools prescribed to combat craft complacency, designated as a “human error enabler” (Konez, 2015, p. 1). These human performance tools include the Pre-Job Briefing, Use of Operating Experience, Procedural Use and Adherence, Self-checking (S.T.A.R.), Questioning Attitude (Stop When Unsure), Peer-Checking, Independent Verification, Clear Communication Techniques, Post-Job Brief, and Task Observation (Konez, 2015, p. 6). Ironically enough, Konez (2015) points out that:

The skills, knowledge and attitudes of individuals take time to change. It is for this reason that effective barriers must be put in place. Managers implement and strengthen defenses, they reinforce error-prevention techniques and maintain the standards and expectations for staff (p. 3).
Clearly the human error in the Konez (2015) paper considers managers to be one of the barriers to error prevention even with research indicating that management contributes to error and complacency.

Nepotism is another important factor that undermines effective policy and procedure adherence. This includes both the favoring of family and friends and organizations such as the Freemasons. Nepotism eliminates the qualifications of skilled and competent employees because it allows favoritism to supersede job performance and ability, placing someone who is less qualified and experienced, in a position of responsibility. Even if a person does not attain a position of authority, and is merely given employment on a job, that person takes the place of a qualified craft person and prevents them from earning gainful employment. “Catfish” was never written up or terminated from Port St. Lucie, even though he was reported for his comments [page 113, March 4, 2023]. This lack of reprimand allowed the nepotism to continue and undermined policies in place, both on a local contractor level and on a federal regulations level. Add to this the greed and findings of “organizational and safety deficiencies” (CSB, 2007, para.3) that were cultivated and permeated at locations such as the BP Texas City refinery which exploded as a result of budget cuts and faulty maintenance while still maintaining large profit margins [Literature Review, pages 26-27], and it is easy to see how a craftsperson’s work history, work environment and education, influence their risk acceptance, and behaviors on industrial jobs.

Both the U.S. Chemical Safety Board and OSHA, along with the lawsuit of a private citizen, who lost both parents in the Texas City disaster, were required to come together to bring some semblance of compliance to the BP refinery. The underlying attitude of corporate leadership survived because of the decisions made by people in positions of power at the top, but also from the mindset of the safety system in place (OSHA, 2023). The bonuses and incentives for a fast
turnaround; the focus on slips, trips, and falls, as the priority by management of safety issues that are always included in the JSA, the RIF’s and temporary workers, that are reflective of organizational attitudes and practices; all these things are cumulative. The policies, procedures, and regulations in place at any industrial site, are only as effective as the people willing to follow and uphold them.

**Research Implications**

Industrial corporations are branching out into other areas of production and manufacturing. Bechtel may have started out building the Hoover Dam, and segued into nuclear construction, but they are now financial consultants. BHI started out providing protective clothing for nuclear workers, but they branched out into scaffolding, turbine maintenance, and electrical construction. The industrial boom currently experienced in semiconductor fabrication, battery plant manufacturing for electric cars, the new wave of nuclear reactors [along with service extensions on older units], and the rush to construct the facilities for manufacturing these new technologies, only enhance industrial safety risks and complacency.

As the skilled craft age and retire, their learned knowledge is lost, as well as the ability to discern variances in standard procedures and protocols. This also means that people promoted to management and leadership positions are not always skilled in the field in which they are supervising. If a 21-plus year construction craftsperson [survey #108] finds that the “knowledge of the craft has significantly declined over the last 10 years” and “a lack of education or experience and training prior to the job task” contribute to complacency, those in the business should take notice. If this same craftsperson identified this “lack of knowledge, the refusal to ask questions if unsure, the ‘fake it till you make it’ attitude, that creates unsafe work conditions”, any additional strain on the work force, including shortages in manpower, will affect human performance and escalate risky behaviors which are detrimental to human security.
The “New Paradigm” (Halnon, 2018), a new regulatory oversight process [Literature Review p. 25], would probably shake the survey #110 participant to their core if it had been implemented in its entirety. The idea that a lobbying group could so effectively and easily eliminate federal requirements for inspections at nuclear power plants, as well as change the color codes for risk events, is almost as shocking as a public utility, such as FP&L, owned by NextEra Energy, Inc., the largest publicly traded utility company, being “recognized often by third parties for its efforts in sustainability, corporate responsibility, ethics and compliance, and diversity” (NextEra Energy Inc, 2024). This is especially telling given the history of anonymous NRC complaints generated by workers at its Port St. Lucie home base, along with the alleged treatment of Operations Manager Mark Hicks, among others (10 CFR 2.206 Petition Review Board RE[FP&L, St. Lucie] Nuclear Plant 2012). Not so telling is the membership of NextEra Energy, Inc. in the Nuclear Energy Institute [NEI,] a lobbying group for nuclear that is authorized to share PADS [Personal Access Data System] information (NEI, 2008), but what is surprising is the fact that FP&L left NEI (Kapnick, 2018; Pyper, 2018) and sued them, in part, for attempting undermining wind, solar, and natural gas, all industries that NextEra Energy, Inc. owns and operates (Pyper, 2018).

NextEra Energy and Entergy’s withdrawal from NEI has implications in the nuclear sector: PADS keeps track of information on nuclear workers which allows data to travel with the worker to every nuclear facility. Every time a worker travels to a non-PADS site, that facility must run a new background check, information can get lost, and data may not be correctly added. Delays in plant entry, such as that at Port St. Lucies [page 103, February 16, 2023], mean that craft miss important outage kick-off meetings, and are subject to the time pressure and confusion of outage tool-up and project lineouts. This means that we are jumping into the outage without adequate acclimation to crew selection, package review, and the walkdown of systems.
The observation of survey #105, as it relates to safety is one “that uses racism, intimidation, and sexism as a tool”, which is much like “improvement projects that put vulnerable communities at risk” (Kousky et al., 2021, pp.73-74) and public tax funding to reimburse the wealthy. In this case the vulnerable communities are craft personnel, and it is the corporate leaders that make the bonus money [craft per diem] initially earmarked for the craft in contract negotiations. In looking at resilience and safety, the “fewer incidence and injuries, the safer the organization looks” (Dekker, 2014, p. 167) as the U.S.NRC Reactor Oversight Process Report (Nureg-1649, 2016), seems to indicate. The performance indicators [Figure 2] on the #1 cornerstone “initiating events” for example, only looks at “unplanned shutdowns or events that lead to scrams or changes in power” (NRC, 2024). Even though there are several events that would be concerning to the plant and are concerning to those of us that work the shutdowns, such as leaking fire suppression systems [pages 116-117, March 8,2023], full throttling of a systems that causes a water hammer of valves and piping to containment which results in cracked support welds and unseated seals [page 75, Port St. Lucie Fall Outage 2022], overfilling of containment water that popped the O-ring on the reactor head [page 117, March 9, 2023], and permanently “temporary” plant air [page 113, March 4, 2023]; these issues are a blip on the screen of normal operations.

Even though nuclear facilities are set up with redundancies, and resiliency methods include these redundancies in their framework (Walker & Salt, 2006, p. 148), if the redundant systems are not in functioning order, what good are they? If a resilience framework is not designed to combat the “problems associated with greed and corruption” (Walker & Salt, 2006, p. 149), or there is a willful disregard for maintenance and timely repairs that are not addressed in the organization’s practices, how is it a useful tool for our future sustainability? Most shutdowns have reduced the number of maintenance workers, not for “efficiency” [because craftspeople are told to work more
hours, often 6 or seven days a week and 12-hours or more a day, and jump around from task to task], but because, if the work can get done with less people, there is this idea that money is being saved, which then equates to a bonus. The efficiencies [as evident at River Bend where speed and a short outage did not save time and money in the long run], do not consider the fatigued worker who takes time off, the lack of material or tools that prevents completion of a task, the weather that hinders production, or the job conditions that require additional efforts to compensate for unplanned or unforeseen shortcomings.

**Questions to Investigate for Future Research**

If the *Atomic Energy Advancement Act* (Duncan, 2024), which includes talking points from the Grag Halnon letter (2018), is passed, what will the NRC landscape look like? This is an especially important question given the influence of lobbying groups like the National Regional Utility Group on NRC hiring, inspections, and the reactor oversight process in conjunction with the Atomic Energy Advancement Act’s authorization of the Department of Energy’s award system for licensing fees at advanced nuclear reactors or “fusion machines”.

If corporations like Bechtel are moving into financial consulting, what does that say about corporate leadership’s agenda in construction and industrial safety?

Are our union brothers and sisters being complacent in upholding our safety values or do we just feel that it is not the union’s responsibility to control safety?

Does the fact that many union members gain access to the union or Freemasons through family members or friends lead these members to negate “nepotism” and “organizational affiliations” as a cause of complacency?
Reflections on Industrial Safety, Corporate Leadership, and Complacency

On March 9, 2023, the O-ring on the reactor head, Unit 2 at PSL, busted out early in the morning after operators overfilled the vessel while bringing the Unit up to pre-outage levels. I did not even give it a second thought while writing the event down on paper that day. The irony here is that my own complacency is visible with my blasé attitude toward this event.

In many ways, complacency is seen in hindsight, but if, as a craftsperson, I have seen the same cycles, and as a collective group, we, as pipefitters, have seen the same normalization of deviance, with the awareness of knowing that an event is a certainty, does it not then become a willful disregard for safety on the part of corporate leadership? Is it not in the “daily, normal work with all the little hiccups and adjustments that do not get formally reported, that we should be focusing on, the frequent events, and not necessarily the severe ones” (Dekker, 2014, pp.140-141)? Complacency is not just “when someone becomes overconfident and starts to lose awareness of steps involved with a procedure” (Merriam-Webster, 2023, Complacency), or a “pattern in which formerly safe behaviors begin varying in form, eventually including deviations that elevate risk of process incidents and/or put frontline workers at elevated risk or injury, occurring in frontline workers as well as decision-making management” (Bielić et al., 2020, p 2). It is also “a gradual change in attitude caused by bad leadership or management” (Bielić et al., 2020, p 2) as well as the nepotism, the favoring of family and friends “in economic or employment terms” (Encyclopedia, 2018, Nepotism), in addition to discrimination, organizational culture, the risk acceptance, and the greed that “obscures an accurate assessment of the risks and blocks a rational choice” (Blackburn, 2014).
APPENDIX A: IRB APPROVALS
EXEMPTION DETERMINATION

November 2, 2023

Dear Christina Downs:

On 11/2/2023, the IRB determined the following submission to be human subjects research that is exempt from regulation:

<table>
<thead>
<tr>
<th>Type of Review:</th>
<th>Initial Study, Exempt 2ii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>Industrial Safety and Complacency</td>
</tr>
<tr>
<td>Investigator:</td>
<td>Christina Downs</td>
</tr>
<tr>
<td>IRB ID:</td>
<td>STUDY00006131</td>
</tr>
<tr>
<td>Funding:</td>
<td>None, None</td>
</tr>
<tr>
<td>Documents Reviewed:</td>
<td>• HRP-254 - FORM - Explanation of Research (1).pdf, Category: Consent Form;</td>
</tr>
<tr>
<td></td>
<td>• HRP-255 - FORM - Request for Exemption (1) (1).docx, Category: IRB Protocol;</td>
</tr>
<tr>
<td></td>
<td>• Thesis Interview and survey questions (3).docx, Category: Survey / Questionnaire;</td>
</tr>
</tbody>
</table>

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in is detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Harry Wingfield  
Designated Reviewer
APPENDIX B: NRC SITE DISCLAIMER
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Page Last Reviewed/Updated Thursday, March 12, 2020
APPENDIX C: SURVEY QUESTIONS
Thesis Research Questions for Interview or Survey

Definitions

Complacency is when someone becomes overconfident and starts to lose awareness or steps involved with a procedure.

Nepotism in the workplace means favoring family and friends over others for opportunities, including hiring, promotions, desirable project assignments, preferred shifts, \textit{merit pay increases} or any openly available opportunity.

(Circle Or Highlight All That Apply)

1. How many years have you been in the construction trades?
   a. 0-10
   b. 11-20
   c. 21+
   d. Retired.
   e. Prefer not to say.

2. Where have you worked?
   a. Commercial
b. Service

c. Nuclear

d. Refinery/Chemical

e. All the above

f. Other: __________________________

3. Of the above-mentioned work environments, which do you feel are/were the safest?

a. Commercial

b. Service

c. Nuclear

d. Refinery/Chemical

e. Other: __________________________

4. Do you feel the above-mentioned work environments are/were the safest based on:

a. Policies in place.

b. Skilled and knowledgeable craft.

c. Skilled and knowledgeable leadership.

d. Organization affiliations.

e. Nature of the work.

f. Adequate manpower.
g. All the above.

h. None of the above

i. Other: __________________________

5. Which work environments do you feel are/were the most dangerous or least safe?

   a. Commercial
   
   b. Service
   
   b. Nuclear
   
   c. Refinery/Chemical
   
   d. All the above
   
   e. None of the above
   
   f. Other: __________________________

6. Do you feel that any of the following contribute to dangerous work conditions or a lack of safety:

   a. Complacency
   
   b. Nepotism
   
   c. Organization affiliations
   
   d. Greed
   
   e. Attitude
   
   f. Lack of manpower.
g. Perceived time pressure.

h. All the above.

i. None of the above.

j. Other: __________________________

7. Do you feel that any of the following negatively affect work quality or craftsmanship:

   a. Complacency

   b. Nepotism

   c. Organization affiliations

   d. Greed

   e. Attitude

   f. Lack of manpower.

   g. Perceived time pressure.

   h. All the above.

   i. None of the above

   j. Other: __________________________

8. Are there industries or work environments that you refuse (are least likely to work in) based on the lack of safety or other perceived dangers?

   a. Yes.
9. Are there industries or work environments that you refuse to work in (are least likely to work in) based on a lack of work quality or craftsmanship?

   a. Yes.

   List here: _________________________________________________________

   b. No.

   c. Prefer not to say.

10. Of the following, which do you feel has the most control over safety:

    a. Management/Leadership

    b. Craft personnel

    c. Organization affiliations

    d. Policies and procedures.

    e. Other: __________________________

11. Do you feel that there has been an increase in complacency in the construction industry since you entered the trade?

    a. Yes.

    b. No.
12. If yes, do you feel that this complacency is due to:

   a. Lack of experience or education.

   b. Nepotism.

   c. Greed.

   d. Organization affiliations

   e. Lack of manpower.

   f. All the above.

   g. None of the above.

   h. Other: ____________________________

13. Have you ever manned a shutdown (nuclear, chemical, refinery, etc.) in which a previously scheduled maintenance/project/repair was not completed, requiring the work to be completed during the current shutdown cycle?

   a. Yes

   b. No

   c. Prefer not to answer.

   d. I don't know.

14. Have you ever manned a shutdown (nuclear, chemical, refinery, etc.) in which maintenance/projects/repairs were deferred or postponed for more than one shutdown cycle?

   a. Yes
b. No

c. Prefer not to answer.

d. I don’t know.

15. Have you ever manned a job in which maintenance/operations management, “the customer” (not your craft/contractor), has requested that your craft/contractor complete repairs or maintenance originally designated as a customer or plant-based facility activity/repair?

   a. Yes

   b. No

   c. Prefer not to answer.

   d. I don’t know.

16. Do you feel that there has been an increase in the number of customer/plant/facilities designated repairs or activities being diverted to the craft during scheduled shutdown maintenance and projects?

   a. Yes

   b. No

   c. Prefer not to answer.

   d. I don’t know.

17. How many postponed or deferred repairs, or diverted plant/facility-based repairs were you aware of during your last shutdown worked?
a. None

b. 1-2

c. 3-5

d. More than 5.

17. Do you feel that a lack of manpower contributes to delayed or deferred repairs?

a. Yes

b. No

c. Prefer not to answer.

d. I don’t know.

18. Do you feel that the lack of manpower is due to (check all that apply):

a. Lack of qualified people.

b. Contractors refusing to hire enough workers.

c. Customers/Plant management refusing to hire enough workers.

d. There is no lack of manpower.

e. Prefer not to answer.

f. Other: __________________________

19. Do you feel that the corporate sector or local contractors, whether public or private, have unchecked practices that negatively impact:
20. Did you:

a. Complete a union apprenticeship.

b. Organize-in without field experience.

c. Organize-in with field experience.

d. None of the above.

e. Prefer not to answer.

21. Positions held (check all that apply):

a. Apprentice.

b. Apprentice foreman.

c. Journeyman
d. Foreman/General Foreman

e. Leadership role beyond General Foreman.

22. Please add any additional comments that you feel are relevant:
LIST OF REFERENCES


https://pophistorydig.com/topics/bp-texas-city-disaster/


https://www.eeoc.gov/statutes/title-vii-civil-rights-act-1964


https://doi.org/10.1177/2378023121992934


Retrieved January 18, 2024.


https://doi.org/10.1177/017084069801900103


