



INTERNSHIP REFLECTION

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Introduction

During the course of my internship with Dominion Energy, I was able to come out with a surplus amount of knowledge, connections, and confidence to help give my career path a jumpstart. Like I mentioned, this internship was at Dominion Energy, I chose this company because while doing research about the company and looking at the job description, I felt this role really could really suit me as it included all the fields of work I wanted to be a part of as well as learning something new like procurement engineering. Some of the responsibilities the job wanted were applying data analytics to performance and quality systems, designing and improving current computer program interfaces using tools like power BI and SAP business warehouse while also using coding languages SQL, python, and java. Another would be to support and perform procurement engineering activities including evaluation, research, and analysis of procurement requirements of materials and services. This goes to show how I was able to gain experience in my degree fields of cybersecurity and computer science, while also gaining experience with procurement engineering. Some outcomes I'd hope to come out with when the internship ends were to gain hands-on experience with not on the cybersecurity area, but the engineering side as well. Another would be working on my professional skills as far as communication skills, confidence, and problem solving or critical thinking. My main outcome I'd hope to receive was getting an offer to work full-time when I graduated.

A bit of history about Dominion Energy is that it's been around for over 200 years, making it one of the oldest utility companies in the U.S. Dominion serves millions of customers providing electricity and natural gas while operating power plants that consists of nuclear, natural gas, coal, and solar. In recent years, the company has shifted its focus toward cleaner energy, investing heavily in solar and offshore wind projects while also upgrading infrastructure to meet growing demand from homes, businesses, and large data centers. Dominion Energy's origins date back to the early 1800s, when small local utility providers began supplying lighting and basic energy services to growing communities. One of its key predecessors, the Virginia Electric and Power Company (VEPCO), played a major role in expanding electricity access across Virginia in the early 20th century. As electricity became essential to both homes and industries, these early companies grew, merged, and expanded their reach. By the mid-1900s, Dominion's predecessor companies were investing in larger power plants and building extensive transmission systems to support the rapid industrial growth happening across the country.

In the 1970s and 1980s, Dominion began diversifying its energy sources by investing in nuclear power, which provided a more stable and large-scale supply of electricity. This shift helped meet increasing demand while also reducing reliance on coal. In 1983, the company became Dominion Resources after a series of mergers and reorganizations, marking its transition into a more modern and diversified energy company. Over the next few decades, Dominion expanded into multiple states and invested heavily in natural gas infrastructure, allowing it to serve a wider range of customers with both electricity and heating fuel.

The late 1990s and early 2000s brought deregulation to the energy industry, creating new competition and challenges. Dominion adapted by improving efficiency and expanding its operations while continuing to focus on long-term stability. In 2017, the company rebranded as Dominion Energy, signaling a stronger emphasis on innovation and sustainability. Since then, it has made major investments in renewable energy, including solar farms and offshore wind projects off the coast of Virginia, which are among the largest in the United States.

Today, Dominion Energy continues to modernize its infrastructure to support growing demand, especially from homes, businesses, and data centers. The company has been retiring older coal plants and transitioning toward cleaner energy sources as part of its goal to reduce carbon emissions and create a more sustainable future. Its long history reflects how the energy industry has evolved, and how Dominion has adapted to meet new technological, environmental, and economic challenges while continuing to provide reliable service to millions of customers.

Knowing all this information before arriving at the internship, my first impressions of the company were great. I knew the company was in a great spot while also knowing I'd be able to thrive working there as they have smart people who contain a lot of information that would be able to help my journey as a college student as well as getting ahead in my career. On my first day in the office, everything was fantastic. My co-workers were very friendly and supportive in helping me get settled in and getting an understanding of the company, their roles at Dominion, what my role would be during my time at Dominion.

What I enjoyed the most was that Dominion is big on gathering interns from different colleges in different states giving them an opportunity to enhance their careers. During the summer, there were many events Dominion offered for interns to network, volunteer work throughout Virginia, travelling and touring the different plants, and more. I really enjoyed the fact that Dominion offers opportunities to jumpstart our career while also making the

experience fun and engaging, remembering a lot of the interns are college students who just finished a semester so they should be able to have a bit of fun.

Management Environment

The management environment was very structured and was supportive in getting me set up. My manager Matthew Nichols was very helpful in making sure there weren't any issues or anything missing as far as providing my work laptop, meeting all my coworkers, and giving me the proper notes and files needed to understand my role and company. Throughout the internship, Me and my manager had meetings Biweekly going over goals he wanted me to focus on whether it was software quality assurance or dealing with metrics. I'd usually use that time to ask questions that I had as a majority of my tasks at the beginning were to read many documents and figuring out things on my own. With those questions, my manager was very detailed with his responses and provided great answers that helped me understand certain things way better than just trying to figure out the answer by myself.

The structure of management was hierarchal. The overall management structure of the company was organized with clear levels of leadership, including team members, managers, and higher-level leadership. Each person had a defined role, which made it easier to understand responsibilities and expectations. Communication was strong across teams, with meetings, emails, and collaboration tools being used to keep everyone aligned. I also had the opportunity to interact with different departments, which gave me a better understanding of how the company operates as a whole.

I'd have to say at the beginning of my internship, it was challenging to determine how effective my manager was being that a good portion of my days were reading through documents with no real hands-on experiences. Also, it seemed like the route I was being led to was more focused in engineering rather than my major which is cybersecurity. Today I can say that management was very effective in my internship. At the time, what I lacked was patience to understand what the end goal was or why I had to do so much reading. Matthew helped me realize that understanding everything was necessary before moving on to what I know or have experience in. I had to learn what procurement engineering really was, why it was needed, and how to truly become a procurement engineer. This really helped me grow both professionally and personally, preparing me for future roles and opportunities to come in my career.

Work Duties

In the beginning of my internship, as I mentioned before, a lot of my tasks were reading documents and gaining an understanding of procurement engineering. As time passed, I was able to start doing more hands-on activities. I became responsible for various tasks including completed procurement documents (PTEs, IEEs, CGIE), using tools such as Power BI, Microsoft excel, Power automate, and Microsoft access to analyze data.

With those procurement documents, a PTE (Procurement Technical Evaluation) is a document used to verify purchased materials from vendors whether we have approved which are considered safety related, or if we don't, we have to go through extra precautions to make sure that the vendor we're buying from is acceptable for our nuclear plants. An IEE (Item Equivalency Evaluation) is a document we use to exchange or substitute a material for another material. This document is mainly used when a vendor on our approved vendor's list has a part, we've been using that's been altered in design, material, or dimension. This also happens if we discontinue with a vendor, we can't use that part anymore and will have to look at other vendors to provide us with a part for replacement. A CGIE (Commercial Grade Item Equivalency) is a document which is used to ensure a commercial item which is an item that isn't from Dominion's approved vendor's list, can be used to perform a safety function in a nuclear facility and considered equivalent to a safety related item. Something to note about those documents is they are extremely time sensitive. These parts are used in nuclear facilities, so it is essential that we complete the documents to verify certain parts and components are safe to use. Any delay in these documents causes a delay with nuclear sites leading to potential loss of power or having to turn off facilities due to not having the part. While there are precautions like back up parts just in case there are delays in documents, it's still important to manage time in completing those documents in a timely manner.

I was involved in software quality assurance (SQA), where I helped test systems and applications to ensure they were functioning correctly and meeting company standards. My responsibilities included reviewing data outputs, identifying errors or inconsistencies, and verifying that processes were running as expected. This work was important because it helped maintain the reliability and accuracy of the systems the company depends on for daily operations. While my role was mainly focused on quality and performance, it also had a connection to cybersecurity, as ensuring software works correctly can help prevent vulnerabilities and reduce the risk of system failures or security issues. Overall, my involvement in SQA contributed to creating more dependable systems while also supporting the company's broader goal of maintaining secure and efficient operations.

Use of cybersecurity skills in internship

During my internship, I got the chance to use some of the cybersecurity knowledge I learned in school, but in a way that felt a lot more real compared to just doing assignments or labs. Before starting, I had a basic understanding of cybersecurity concepts like network security, protecting data, and how vulnerabilities can impact systems. I was also familiar with things like access control and secure system design from my classes and projects. However, most of that experience was in a classroom setting, so I hadn't really seen how it all connects in a real company environment.

During the internship, I was able to apply those skills through my work in software quality assurance (SQA). I spent time testing systems, checking for errors, and making sure everything was working the way it was supposed to. Even though it wasn't directly labeled as cybersecurity work, it still played a role in it. By catching issues early and making sure systems were accurate and reliable, I was helping reduce the chances of problems that could turn into bigger security risks later on. This helped me realize that cybersecurity isn't always just about stopping hackers, but also about making sure systems are stable and trustworthy.

I also learned new skills while on the job. I worked more with tools like Excel and Power BI to review and analyze data, which helped me spot inconsistencies and better understand how data is handled within the company. I was also exposed to automation processes, which showed me how companies try to improve efficiency while still keeping systems controlled and secure. Being in a real work environment made me pay more attention to detail, since even small mistakes could have a bigger impact than they would in a classroom setting.

One of the biggest things that changed me was how I view cybersecurity overall. Before the internship, I mainly thought of it as something focused on defending against attacks. After my experience, I see it more as something that is built into everyday tasks, like testing systems, managing data, and making sure processes are done correctly. It's not always obvious, but it's always there in the background. This experience helped me better understand how cybersecurity connects to other areas like SQA and data analysis, and it gave me a clearer idea of how I can apply these skills in my future career.

ODU Curriculum Preparation

Coming to the end of my internship and reflecting about this, I believe that the coursework played a valuable role in preparing me for the internship. Many classes offered a solid foundation in the technical and cybersecurity foundation. Some of the classes I've taken like networking or system design contributed greatly to helping me understand how to manage data and managing networks, allowing me to pick up or understand some of the operations in the company. I learned about concepts such as identifying vulnerabilities, managing access control, and understanding the importance of protecting sensitive data. These topics directly connected to the work environment, even when I wasn't doing strictly cybersecurity tasks, because I was able to recognize how security is built into everyday processes. I also had experience working with databases and data management concepts, which helped me better understand how the company organizes and uses large amounts of information.

In addition to the technical knowledge I received from the classes, I was also able to enhance my problem-solving skills. Being that I have the background of cybersecurity and computer science which are both heavy in problem solving, critical thinking, and troubleshooting issues, it was able to help me ease into the internship. An example of this would be doing assignments that were focused on areas like design systems which made it easier to understand software quality assurance at the internship.

However, I will say there were certain things the school did not prepare me for. One of the main things was the fact that many of the tasks and projects I had to do at my internship were very complex and filled with unexpected outcomes. At Old Dominion, a lot of my assignments were in a walk-through style where you really didn't have to explore or experiment to find the answer, you were just told if you did a step, and continued to follow the steps below, you'd find your answer. I also feel the school needs to implement more classes around Microsoft apps like Power BI, Power automate, and more. I've used these apps many times but had to learn how because I was never taught what it was or how it worked.

Overall, my experience at ODU gave me a strong starting point that made it possible for me to succeed in my internship. The technical knowledge and problem-solving skills I developed in my classes helped me understand my work and contribute to the team. At the same time, the internship showed me that there is a gap between academic learning and real-world application, especially when it comes to tools, communication, and working with large systems.

Internship Objectives

Coming to the end of my time with the internship, I stated above that I had some objectives or outcomes I'd hope to receive when I near the end of my internship. They were to get hands on experience in both the cybersecurity and engineering field, improving my personal skills like confidence and communication skills. And lastly hoping to get a full-time job.

Today I can confidently say I was able to fulfil all of the objectives I set for myself. Starting with the hands-on experience, I was able to use some of the information I learned from school and apply it to the Internship. Throughout my time, I worked on real-world systems and processes instead of just assignments, which made a big difference in my understanding. I was involved in tasks related to software quality assurance and automation, where I had to ensure that systems were working correctly and efficiently. This gave me exposure to how cybersecurity and engineering practices are actually implemented in a professional environment. Even though not every task was strictly labeled as "cybersecurity," many of the things I worked on, such as testing systems, identifying issues, and improving processes, all play a role in maintaining secure and reliable systems. This experience helped bridge the gap between what I learned academically and how it is applied in the real world.

Another objective I had was to improve my personal skills, specifically my confidence and communication. At the beginning of the internship, I was not as comfortable speaking up, asking questions, or explaining my work to others. However, over time, I put myself in situations where I had to communicate with team members, ask for clarification, and sometimes explain what I was working on. This helped me become more confident in a professional setting. I also learned how to communicate more effectively, especially when working on technical problems, by being clear and concise. By the end of the internship, I noticed a significant improvement in how I interacted with others, and I felt much more comfortable contributing to discussions and collaborating with my team.

Lastly, one of my biggest goals was to receive a full-time offer at Dominion, and I am proud to say that this objective was also achieved. As I got closer to graduating, my performance and contributions during the internship led to me getting a full-time position with the company. This outcome not only validated the work I put in throughout the internship but also showed that I was able to meet the expectations of a professional work environment. It gave me a clear path moving forward in my career and reinforced my confidence in my skills and abilities.

Overall, my internship experience successfully fulfilled all of the objectives I initially set. I was able to gain valuable hands-on experience, grow personally and professionally, and secure a full-time opportunity. More importantly, the internship helped me better understand the type of work I want to pursue in the future and prepared me for the transition from being a student to entering the workforce.

Most Motivating aspects of the internship

I would have to say the most motivating part of my internship was just learning as much as I could about my role, the company, my co-workers, and the different roles around the company and how they contribute to Dominion. The history of Dominion dates back to as far as the 1800s and seeing how much the company has evolved today is amazing. To see how the company started by providing power and energy to local communities to now being global and now moving to things like offshore wind energy, it's just an honor to see and be part of the journey Dominion has gone through.

Another thing that was motivating for me was how reassuring my coworkers were in helping me if I made a mistake. I wasn't perfect during my time and made many mistakes or maybe forgotten a few tasks, but they were always happy to assist in helping get things done. If I had questions about anything, they'd always give me great answers. What I admired about them the most is that they understood that even though I was an intern, I was also actively in school while working at Dominion which required me to drive from Norfolk to Richmond 2-3 times a week. They gave me the ability to figure things out on my own while also not leaving me hanging to do things alone just in case something at school were to come up unexpectedly. This gave me so much confidence and motivation to stay with the internship no matter how hard it became because I knew this wasn't just an internship to fill a spot, they wanted me to feel comfortable, heard, and seen whether I was offered a full-time position or not.

Most Discouraging aspect of the Internship

There wasn't much that was discouraging about the internship, but I'd say the amount of reading I had to do before getting into the hands-on experience was very discouraging. When I first arrived, I read every day for about 2-3 months, and it was very hard to stay focused. While I understood why it was necessary to read the documents, it got to a point where I was reading but not understanding being that all the information I was reading wasn't being applied to hands-on experiences. Also there were many other tasks I wanted

to participate in, but I'd needed certain qualifications specific to Dominion to be a part of it which interns aren't able to obtain unless they are full-time employees.

Another thing that was discouraging about the internship was not having access to many folders or databases that contained info that I needed to complete some of my projects and tasks. The reason behind this was because for many interns, they are only at the company for a few months, so it wouldn't be wise to grant them access knowing they're leaving soon. For my situation, I was here longer than other Interns and required access to a lot of things, so having to put in requests to IT help constantly to try and get access, waiting days and weeks for them to deny me access because I was still an intern was very frustrating as many projects I was working on became me watching my co-workers.

The most challenging aspect of the internship

The most challenging aspect of my internship was time management. Being that the main office was in Richmond and I attend Old Dominion University, I was required to be in office a few days a week while in school. This was very exhausting having to constantly drive back and forth 2-3 days a week. However, I was able to work virtually many times and my manager was very supportive in allowing me to take some time off if school started to get serious, but it still was very tough mentally staying focused with school as well as financially continuously paying for gas having to drive about 200 miles a day back and forth to school and work.

Something else that was challenging was having to learn engineering. I thought when I first started, I'd be doing only tasks and projects surrounding cybersecurity and computer science but I was completely wrong. The majority of my time was learning about engineering, which became difficult as I was in school learning about cybersecurity, yet when I worked, it was only engineering. I wasn't able to apply the knowledge I had surrounding cybersecurity to engineering as these were two completely different fields. Even though down the road I'd be getting into cybersecurity related tasks, for me it was just seeing other interns having different projects done while I was reading

Advice for future interns at Dominion Energy

Looking back at my time, I would say be willing to be uncomfortable. Be willing to say yes to everything and take every opportunity someone offers you, even if its not related to your major. This shows the company that you're willing to learn and are interested in their mission. I was able to take trips to different states and look at the nuclear plants we have because I put myself in positions where I wanted to learn more about the company.

Another piece of advice I'd give mainly to someone who's also doing a year-round internship is to be patient and enjoy the progress. When you first start, it may seem like you aren't doing much compared to other interns, but you have to learn before you begin doing the things you're good or have experience in.

Lastly, a piece of advice I would offer is to not pressure yourself into feeling like you have to know everything. It's an internship, not a full-time job. You are there to learn and the people who do have full-time jobs are there to help and show you what goes on. It's ok to mess up or not know the answer to a question they ask you. This is the time to ask questions and make mistakes so that you can learn and improve for that next internship or job.

Conclusion

In conclusion, this Internship was not the slightest easy at all. It was stressful, exhausting, and were many times where I wanted to leave the internship. However, looking back on the experience, those challenges ended up being the most important part of my growth. My biggest takeaway is that real-world work is very different from what is taught in the classroom. Deadlines, expectations, and problem-solving in a professional environment require a different level of discipline and persistence. I learned that being uncomfortable is part of the process, and pushing through those moments helped me become more confident in my abilities.

This experience will definitely influence the remainder of my time at Old Dominion University, especially since this is my last semester before graduating. It has given me a clearer understanding of the skills and knowledge that are most important in a professional setting, which will change how I approach my final classes. Rather than simply focusing on completing assignments and passing courses, I now want to concentrate on fully understanding the material and how it connects to real-world applications. I plan to put more effort into areas such as cybersecurity, networking, and automation because I have seen how valuable these skills are in the workplace. This internship has also encouraged me to be more confident in asking questions, participating in discussions, and making the most of my final semester as I prepare to transition into a full-time career.

Looking ahead, this internship has had a major impact on my future professional path. It confirmed that I want to continue working in a field that combines cybersecurity and engineering, while also exposing me to areas like automation that I did not originally consider. It also helped me understand the type of work environment I want to be in and what is expected of me as a full-time employee. Most importantly, receiving a full-time offer has given me a clear direction after graduation, which removes a lot of uncertainty

about my future. Overall, this experience has better prepared me for transitioning from college into a professional career and has given me a stronger sense of confidence in my long-term goals.