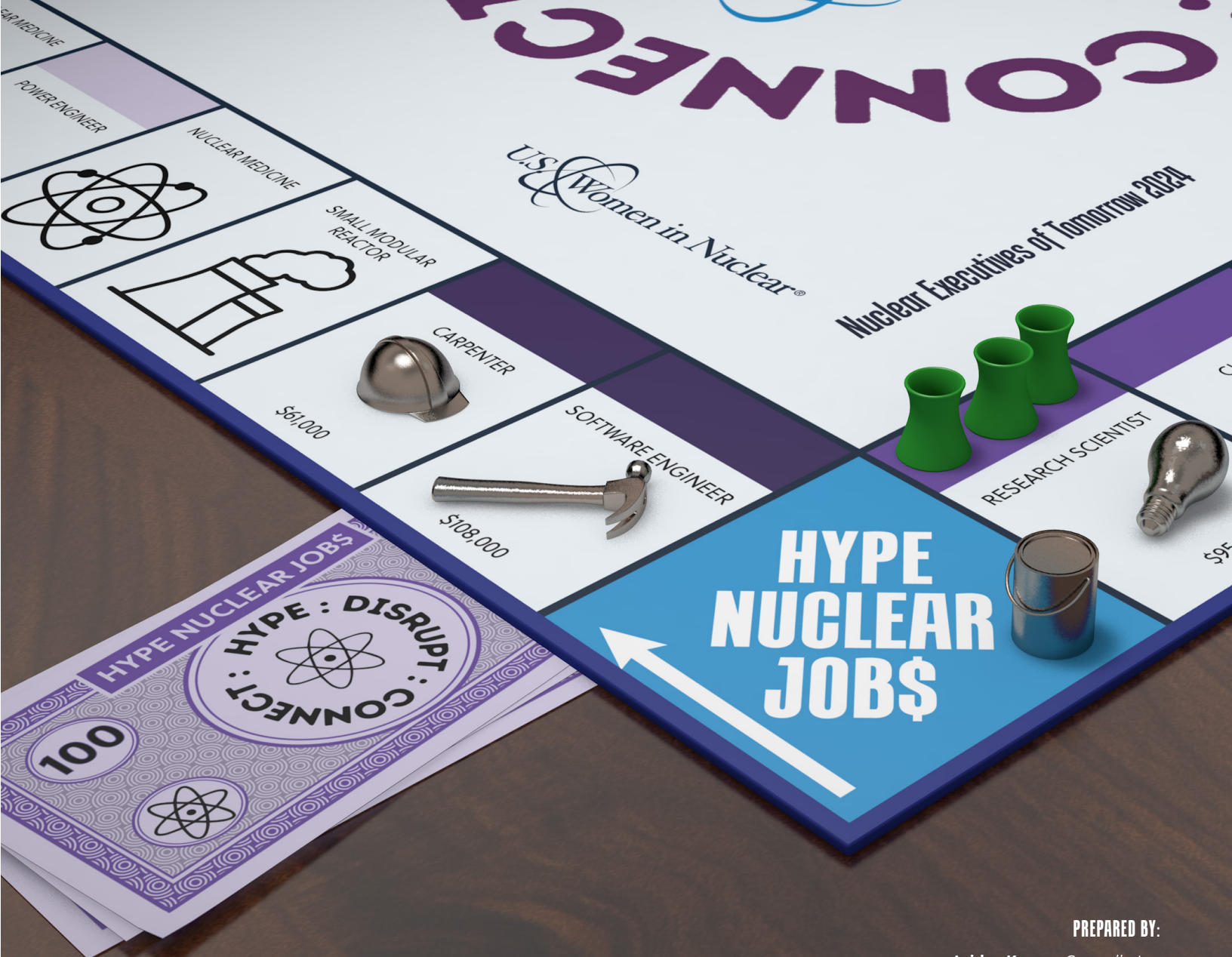


CONNECTION : HYPE : DISRUPT : NEXT 2024

US Women in Nuclear®

Nuclear Executives of Tomorrow 2024



Capstone Project: HYPE NUCLEAR JOBS\$

PREPARED BY:

Ashley Kovacs Constellation
Bonnie Hong Idaho National Laboratory
Emily Tarle Ontario Power Generation
Hannah Arrington Framatome Inc.
Janice Cruz Florig Power & Light
Karen Kessler Energy Northwest
Lisa Davies Fluor Government Services
Liz Williford Southern Company
Michelle Zietlow-Miller Idaho National Laboratory
Rose Montgomery Oak Ridge National Laboratory
Sarah Ortman GE-Hitachi
Stephenie Pyle Entergy

This page is intentionally blank.

**U.S. Women in Nuclear (WIN)
Next Executives of Tomorrow 2024 (NEXT24) Capstone Project
EXECUTIVE SUMMARY**

**HYPE:DISRUPT:CONNECT
NUCLEAR JOBS**

The world's energy demands are increasing. The global economy now relies on digital technology and data centers. Many countries seek to utilize nuclear energy as the primary source for electricity providing carbon-free base load power and other countries enable nuclear in the energy mixⁱ. There is a movement for clean sustainable energyⁱ to reduce the impact of power generation on the environment and to have energy independence and security as many countries move towards a NetZero goal.

According to the U.S. Chamber of Commerceⁱⁱ, the dynamics of the U.S. labor market are changing rapidly. These changes are expected to have a lasting effect on employment and business operations. However, the market for workers is increasingly competitive. Fewer entry level workers are joining the workforce. As it competes with highly regarded industries such as health care, finance, and business industries for fewer workers, the nuclear industry will need to proactively seek and appeal to new workers. According to the Department of Energy (DOE) "Pathways to Commercial Liftoff: Advanced Nuclear" report, the U.S. would need approximately 275,000 additional nuclear energy employees in a wide variety of fields to support an additional 200 GW of new nuclear by 2050. The number of small modular reactor (SMR) projects has expanded 65% since 2021ⁱⁱⁱ—these accelerating energy markets in the U.S. and internationally demonstrate the need to maintain and expand the U.S. nuclear workforce.

The increase in jobs in the nuclear field is not limited to degreed career positions. To fill the gap for construction, demonstration, and deployment of new small modular reactors (SMR), an estimated 50,000 jobs are desired by 2030 with approximately 10,000 of those being skilled craft workers, trade workers, and technicians. More workers are also required in business and accounting, marketing, communications, and other nontechnical arenas.

It is critical that the nuclear industry proactively seek and attract new workers while retaining current employees to meet the U.S. clean energy goals. The time to act is NOW.

Jobs in the nuclear energy industry are not as familiar to the public and often people believe that one must have special qualifications to work in nuclear. The word "nuclear" also carries various stigmas (i.e. weapons, safety)

that challenge recruiting workers to the nuclear community. the nuclear industry needs to act now to establish and create pipelines for workers.

The Vision

The NEXT24 vision is to initiate and sustain HYPE around nuclear jobs that creates interest, builds momentum, and highlights opportunities, through creative and targeted information sharing, connecting with people who never thought of working in the nuclear sector. This campaign will DISRUPT traditional methods used to attract jobseekers in the nuclear community. This campaign will also CONNECT jobseekers with information that will highlight the higher pay and job security associated with nuclear jobs as well as dispel myths (e.g.: the idea that one needs to be a PhD to work in the nuclear industry). This campaign will attract and connect jobseekers with resources for their ideal career in the nuclear industry which is carbon-free, environmentally friendly, and sustainable and efficient clean energy source.



ⁱ <https://www.reuters.com/sustainability/climate-energy/over-110-countries-set-join-cop28-deal-triple-renewable-energy-2023-12-02/>

ⁱⁱ <https://www.uschamber.com/workforce/data-deep-dive-the-workforce-of-the-future>

ⁱⁱⁱ <https://www.woodmac.com/press-releases/2024-press-releases/global-nuclear-smr-project-pipeline-expands-to-22-gw-increasing-more-than-65-since-2021/>

The Plan

WIN NEXT24^{iv} has identified three primary initiatives to attract job seekers outside of the nuclear community: hype nuclear campaign, gamification, and a request for proposal.

HYPE Nuclear Campaign

Engagement with innovative marketing and advertising professionals will bring life to NEXT24

HYPE : DISRUPT : CONNECT vision, with the goal of making a significant impact on ***how the nuclear industry engages with the public and potential talent.***

DISRUPT via Gamification

To disrupt traditional industry methods of attracting and recruiting talent, the NEXT24 cohort has ***introduced a social media quiz*** based on an individual's strengths entitled *What Nuclear Job is Right for You?* as an illustration of the power of gamification.

The jobseeker's quiz helps match current skills and preferences to a job in the nuclear industry. As each jobseeker moves through the quiz, general information is offered about nuclear energy to educate and dispel common myths associated with nuclear power.

CONNECT utilizing Request for Proposal

To enable momentum and continuity, NEXT24 has drafted a request for proposal (RFP), *Transformational Promotional Experience for the Nuclear Industry's Workforce Ambitions*, that can be used to solicit proposals for a unified industry communications campaign.

*NEXT24 HYPE : DISRUPT : CONNECT initiative has been enthusiastically supported by several utility Chief Nuclear Officers (CNO)s, with the most popular element of the proposed campaign being the idea of a Superbowl commercial. The resulting discussion solidified the idea that the nuclear industry **should** have a Superbowl commercial and that this is feasible.*

Try the prototype quiz here:



What makes this campaign different from the traditional status quo?

The HYPE:DISRUPT:CONNECT campaign envisioned within the RFP is formulated to generate momentum and **HYPE** to attract people *outside of the nuclear community* and to *retain those within the nuclear community*. The campaign will revolutionize talent attraction to the nuclear industry and is prescribed to meet the U.S. nuclear generation and workforce goals for 2030. The campaign will implement an innovative and comprehensive promotional experience that hypes nuclear energy as a desirable career choice, thereby ensuring a sufficient and skilled workforce. This campaign seeks to **DISRUPT** conventional recruitment methods, **CONNECT** with diverse audiences, and make nuclear energy a prominent and appealing option in the job market, ultimately supporting clean energy goals and economic benefits. Gamification through the nuclear job quiz makes learning about jobs fun and attracts and educates people outside of the nuclear community. Jobseekers who may not realize their current skills and experience are applicable to the nuclear industry will be able to realize the potential using fun, relatable social and digital media.

Your Opportunity

The WIN NEXT24 cohort challenges the nuclear community to *inspire* talented professionals, tradespeople, and leaders to choose a nuclear career that provides stability, higher pay, challenging and interesting work to realize the world's clean energy goals. NEXT24 invites YOU to **HYPE** nuclear jobs, **DISRUPT** the traditional status quo for attracting talent, and **CONNECT** job seekers with resources to make informed decisions about careers in nuclear energy.

JOIN THE MOVEMENT
&
BE PART OF THE SOLUTION!



U.S. Women in Nuclear



Capstone Project:
HYPE NUCLEAR JOBS



Prepared by:

Ashley Kovacs, Constellation
Bonnie Hong, Idaho National Laboratory
Emily Tarle, Ontario Power Generation
Hannah Arrington, Framatome Inc.
Janice Cruz, Florida Power & Light
Karen Kessler, Energy Northwest
Lisa Davies, Fluor Government Services
Liz Williford, Southern Company
Michelle Zietlow-Miller, Idaho National Laboratory
Rose Montgomery, Oak Ridge National Laboratory
Sarah Ortman, GE-Hitachi
Stephenie Pyle, Entergy

14 July 2024

This page is intentionally blank.

Contents

| | | |
|-------|--|-----|
| 1 | Introduction..... | 3 |
| 2 | NEXT24's Vision | 3 |
| 3 | The Opportunity..... | 4 |
| 4 | The Plan | 4 |
| 4.1 | HYPE Nuclear Campaign..... | 4 |
| 4.2 | Gamification: matching jobseekers and nuclear energy jobs..... | 5 |
| 4.2.1 | Parallel gamification goal: sharing nuclear industry facts | 7 |
| 4.2.2 | Parallel gamification goal: busting myths about nuclear power | 7 |
| 4.2.3 | Parallel gamification goal: supporting positive impressions of nuclear energy..... | 8 |
| 4.2.4 | Parallel gamification goal: supporting coal-to-nuclear transitions..... | 8 |
| 4.2.5 | Social media platform selection..... | 9 |
| 4.3 | Request for Proposal for Advertising Agencies..... | 9 |
| 5 | Know the audience..... | 10 |
| 5.1 | Who is the nuclear industry looking for? Jobs to actively recruit for nuclear! | 10 |
| 5.2 | What are jobseekers looking for and who are they? | 11 |
| 5.2.1 | An important note on life-work balance | 12 |
| 6 | The Difference | 12 |
| 7 | Development Schedule and Status of Activities | 12 |
| 8 | Outcomes & Estimated Reach | 13 |
| 9 | What is not included in the scope of this work? | 13 |
| 10 | Your Call to ACTION to do NOW | 14 |
| | APPENDIX A NEXT24 Request for Proposal..... | A-1 |
| | APPENDIX B Bibliography | B-1 |

This page is intentionally blank.

1 Introduction

The world's energy demands are increasing. The global economy now relies on digital technology and data centers. Many countries seek to utilize nuclear energy as the primary source for electricity providing carbon-free base load power and other countries enable nuclear in the energy mix. There is a movement for clean sustainable energy [1] to reduce the impact of power generation on the future environment and to have energy independence and security as many countries move towards a NetZero goal.

Growing energy needs have encouraged governments and commercial companies to invest in nuclear technologies. In the U.S., fossil fuel plants are retiring. The National Conference of State Legislatures noted in the 2023 report [2] that many U.S. states are considering nuclear power to support grid reliability and communities impacted by the closure of fossil fuel facilities. They reported that several states have acted to ensure existing nuclear power reactors continue to operate while supporting the development of advanced reactors. Per the *SMR Nuclear Market Update 2024* [3], the US small modular reactor (SMR) project pipeline has reached 22 GW in the first quarter of 2024, an expansion of 65% since 2021. Nuclear power is recognized across the world as our largest source of carbon-free electricity. However, our nuclear workforce has not yet grown to support the increase in demand for nuclear power and the U.S. will not be able to support increased nuclear power production if the nuclear community does not recruit and train new staff. This need requires the nuclear industry to act now to establish and create pipelines for workers.

According to the U.S. Chamber of Commerce [4], the dynamics of the U.S. labor market are changing rapidly. These changes are expected to have a lasting effect on employment and business operations. The market for workers is increasingly competitive. Fewer entry level workers are joining the workforce. As nuclear and nuclear-related industries compete with highly regarded industries such as health care, finance, and business industries for fewer workers, the nuclear industry will need to proactively seek and appeal to new workers. According to the Department of Energy (DOE) [5], the U.S. will need approximately 275,000 additional nuclear energy employees in a wide variety of fields to support the additional 200 GW

It is critical that the nuclear industry proactively seek and attract new workers while retaining current employees to meet the U.S. clean energy goals. The time to act is NOW.

of new nuclear needed to meet climate change goals by 2050.

The increase in jobs in the nuclear field is not limited to degreed career positions. To fill the gap for construction, demonstration, and deployment of new small modular reactors (SMR), an estimated 50,000 jobs is desired by 2030 with approximately 10,000 of those being skilled craft workers, trade workers, and technicians. More workers are also required in business and accounting, marketing, communications, and other nontechnical arenas [6][7]. New builds put forth by over 100 vendors developing new nuclear reactor designs dictate the critical urgency and demand for the U.S. to recruit these essential workers.

Jobs in the nuclear energy industry are not as familiar to the public and often people believe that one must have special qualifications to work in nuclear. The word “nuclear” also carries various stigmas (i.e. weapons, safety) associated with nuclear accidents (e.g. Three Mile Island, Fukushima Daiichi) that challenge recruiting workers to the nuclear community.

2 NEXT24's Vision

The NEXT24 vision is to initiate and sustain HYPE around nuclear jobs that creates interest, builds momentum, and highlights opportunities, through creative and targeted information sharing, connecting with people who never thought of working in the nuclear sector. This campaign will DISRUPT traditional methods for the nuclear community in how to attract jobseekers. This campaign will CONNECT jobseekers with information that will highlight the higher pay and job security associated with nuclear jobs as well as dispel myths (for example, the idea that one needs to be a rocket scientist to work in the

nuclear industry). This campaign will attract and connect jobseekers with resources and links to begin looking for the ideal career in the nuclear industry which is carbon-free, environmentally friendly, and sustainable and efficient clean energy source.

3 The Opportunity

The WIN NEXT2024 cohort challenges the nuclear industry to work together using one voice to inspire and empower talented, competent professionals, tradespeople, and leaders to choose a career in the nuclear community that provides stability, higher pay, challenging and interesting work, and help realize the world's clean energy goals. What would inspire and empower you to leave your career for something else?

WIN NEXT24 proposes to launch a nuclear jobs campaign that engages and educates the public on nuclear and opportunities that appeal to all idealisms—stable jobs; better pay using current skillsets; on the job training, safe place to work; job security; and supporting clean energy and NetZero objectives. To recruit the large number of new workers needed, the nuclear energy industry needs to be a contender in every phase of the job search process. NEXT24 challenges the nuclear community to create an excitement that attracts jobseekers from all levels experience and skills to consider nuclear through gamification and development of a unified overarching communications plan. The message should include the existing nuclear fleet, an introduction to advanced nuclear, and the gamut of career opportunities. The message should be delivered to a new and broader audience through social media, gamification, and nuclear myth busting.

The WIN NEXT2024 cohort intends to HYPE nuclear, DISRUPT the traditional status quo for attracting talent, and CONNECT job seekers with resources to make informed decisions about careers in nuclear energy. NEXT24 urges our leadership and Chief Nuclear Officers of U.S. commercial utilities to act now to develop a unified industry hype through our proposed social media gamification, Superbowl commercial, and communications plan. But our leadership cannot achieve this alone; the nuclear community needs all levels and all staff to HYPE:DISRUPT:CONNECT with people outside our nuclear bubble. Join the movement and be a part of the solution!

4 The Plan

WIN NEXT24 has taken three actions to attract and interest job seekers outside of the nuclear community: 1) lay the groundwork for a unified HYPE nuclear campaign; 2) implement gamification as a recruitment tool, and 3) develop a request for proposal that can be used by nuclear leadership to develop a new strategic communications plan.

4.1 HYPE Nuclear Campaign

The WIN NEXT24 campaign recommends engaging with innovative marketing professionals to bring the HYPE : DISRUPT : CONNECT vision to life, aiming to transform how the nuclear industry connects with the public and potential talent. Development of a unified communications plan is essential to supporting all aspects of nuclear energy recruiting. The message will cover the existing nuclear fleet, introduce advanced nuclear, and highlight diverse career opportunities. Our goal is to showcase that quality jobs are available in all trades and education levels, and that nuclear qualifications are similar to non-nuclear ones for most jobs.



Engagement with innovative marketing and advertising professionals will bring life to NEXT24 HYPE : DISRUPT : CONNECT vision, with the goal of making a significant impact on how the nuclear industry engages with the public and potential talent.

4.2 Gamification: matching jobseekers and nuclear energy jobs

To attract talent to the nuclear industry in this jobseeker's market, nuclear recruitment methods need to be updated and NEXT24 proposes the use of gamification in many applications. When people hear the word “gamification,” the automatic thought is usually video games or online gaming. These two activities are part of gamification; however, gamification marries game theory with design characteristics and desired outcomes to enhance a process to be more interesting and engaging. Tools using gamification for health and wellness, education, and sales are already being widely utilized. Gamification tools are increasingly used in recruitment, interviewing, and hiring to make the process easier and less stressful for jobseekers.

Three examples, among many, of successful gamification include: A) M&M’s “Help Orange Find Pretzel Guy” [8] ; B) Noom weight loss app [9]; and C) America’s Army [10].

- A. M&M’s “Help Orange Find Pretzel Guy” (2017) – M&M characters on Facebook are brought to life and engaging and experience real world fears such as being eaten. There was a plea from Orange to help find Pretzel Guy who had just been introduced in a picture of M&Ms. This use of gamification attracted people to attempt to find Pretzel Guy as well as discuss the quest on Facebook and other channels. As a result, the Facebook page was active and sales of M&Ms increased. [11]
Bottom line: The game connected users with the brand and had >25,000 comments on Facebook.
- B. Noom weight loss app (2018) – the noom app has a unique selling point in that there is a call-to-action button, nudges, and promises to support the weight loss journey as lifestyle choices change. Challenges and success activities are seamless and illustrates noom is fun and easy to use. [12]
Bottom line: The weight loss app keeps users engaged even when willpower decreases and resulted in >45 million users.
- C. America’s Army (2002) – U.S. Army created a game to let people learn about the army and determine if being a soldier aligned with personal skills—if so, those individuals should join the Army.
Bottom line: America’s army reached 20 million players and resulted in 45,000 recruits. Good people are worth fighting for!

The benefits of using gamification tools have been clearly demonstrated by these and many other applications in the marketplace—the jobseeker receives information in a fun and interactive format, and the information is more likely to stick, increasing the potential that the jobseeker will act.

As an illustration of one gamification tool that can be used to support nuclear recruiting, the WIN NEXT24 cohort has developed “**What Nuclear Job is Right for You?**” —a quiz that matches jobseeker skills and preferences to a job in the nuclear industry. The jobseeker’s quiz includes a series of questions that will guide the jobseeker to nuclear job categories as options for a new job or career switch. For this

93 nuclear power plants in 28 U.S. states currently produce 775 billion kW-hr of clean electricity – enough to power more than 72 million homes



Source: U.S. Department of Energy at www.energy.gov/ne

What nuclear energy job is right for you?

Our top clean energy source is nuclear power. Available 24/7, nuclear supports our climate goals, national security, and leadership in innovation. The U.S. is building new power plants and **we need people at all skill levels**. Examples of jobs we are filling now include electricians/lineworkers, accountants, engineers, radiation control technicians, pipefitters & welders, cybersecurity specialists, and project managers.

Start press Enter

prototype, the nuclear job categories are currently targeted as skilled trades jobs (see Section 5), rather than science, technology, engineering and math (STEM) or leadership jobs, but many permutations of the quiz are possible and can be added and expanded as desired. At the end of the quiz, the jobseeker is offered recommendations for jobs that fit the provided profile, along with links for more information and suggestions on how to get started with a new job (a call to action). The quiz is customized for the nuclear industry and will be used as a strategic communications tool to help jobseekers learn about the nuclear industry and consider applying current skills in a nuclear job.

While the jobseeker's quiz provides information on jobs in the nuclear industry, other objectives for the quiz include building public trust, promoting nuclear culture, and dispelling the stigma that nuclear is dangerous. Positive fun facts and diverse photos will be showcased in conjunction with the quiz questions on preferences and skill mix. In addition, conveying the idea that additional education is not necessarily needed, and on-the-job training will be provided may entice jobseekers to apply for a job in nuclear.

The “**What Nuclear Job is Right for You?**” jobseeker quiz will be short and engaging, yet meaningful in forging a knowledge of and connection with nuclear jobs.

2 → Do you prefer working solo or as a part of a team?

Description (optional)

Control room operators do not work alone.

In several episodes of *The Simpsons*, Homer Simpson is by himself in a control room managing the reactor. According to the Nuclear Regulatory Commission, at least two qualified individuals must be present in the control room at all times during reactor operation.



Sources: www.energy.gov/ne/articles/7-things-simpsons-got-wrong-about-nuclear and <https://nuclear.duke-energy.com/2011/07/26/the-nuclear-workforce>

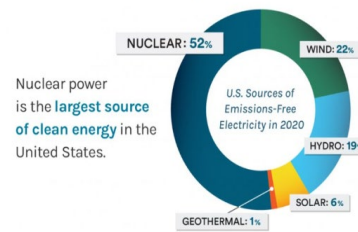
- ☐ A I prefer to work solo
- ☐ B I enjoy working in teams, but often it is more efficient to work on my own
- ☐ C I love working in teams! Collaboration brings the best ideas to the table

well-known proponents of nuclear to engage as a spokesperson and/or baseball card.

Our entry-level demonstration quiz provides a small illustration of the reach and power of this type of gamification tool. Future expansions of the questions,

10 → What's your attitude toward on-the-job learning and training?

Description (optional)



Source: Department of Energy – Office of Nuclear Energy

- ☐ A Continuous learning is essential for doing my job well
- ☐ B I'm always eager to learn new skills
- ☐ C I'll learn if I have to, but I prefer sticking to what I know

There is already a lot of information about the nuclear workforce available online; however, the drawback to the existing information is that it relies solely on nuclear being considered as an option. To find it, the jobseeker must search on “nuclear” and “jobs,” which is not going to happen if the jobseeker isn't already tuned in to nuclear jobs. Also, while there are existing government websites that provide nuclear job and salary information, those websites are not easy to find or intuitive to use. Given the retirement of coal plants in the U.S., there are many websites, reports, and other tools that illustrate the number of jobs needed should an SMR be constructed, or coal plant facilities and equipment repurposed [13][14][15][16][17][18][19][20].

Our quiz has a different objective – to connect – and is not meant to be a replacement or replica of other tools. It is meant to be delivered through social media platforms and will plant the seed! The possible expansion opportunities for the quiz are unlimited. A few ideas include a) interview current nuclear workers to include video; b) create a digital “baseball” card or boardgame type bio card with many diverse profiles associated with the various job skillsets and outcomes in the quiz; c) invite famous /

Try the prototype quiz



graphics, and animation can propel the quiz to viral status, making it a very powerful tool to convey key educational pieces of information to inform about nuclear energy and NetZero goals.

The following sections describe several parallel goals that are accomplished within the gamification approach.

4.2.1 Parallel gamification goal: sharing nuclear industry facts

The quiz contains a significant amount of information packed into a small space. It is planned to include information about pay, job security, challenging work scope, nuclear support of local cities and schools, and nuclear's role in reversing climate change. These facts are intended to improve public opinion and entice jobseekers. Some examples of facts that can be integrated to the gamification tool include:

- Nuclear jobs offer premium wages, on the order of 65% over the average job in the five-state Southeastern region [21]
- Nuclear power provides a challenging and rewarding career. New technologies are improving our plants daily and advanced reactor technologies offer opportunities for innovation
- Utilities will train motivated individuals that meet minimum requirements of employment
- Nuclear needs span several decades and go beyond the lifetime of current plants [22]
- A career in nuclear energy is a lifetime contribution towards making the world a better place through clean energy production
- Nuclear power plants offer significant economic benefits for communities that host reactors, with higher home values, a higher employment rates and average family incomes, and increased county and school budgets through taxes and fees. A 2015 survey conducted by the Nuclear Energy Institute concluded that 89% of residents within 10 miles of a reactor view nuclear energy favorably [21]
- The nuclear industry, national labs, and utilities also contribute billions of dollars annually to local economies through federal and state tax revenues [21][22][23]
- For every 10 jobs created in the nuclear industry, another 18 jobs are created elsewhere in the region [23]
- For every \$100 in revenue generated by new nuclear power plants, approximately \$200 in total economic output is created, representing a 2:1 ratio [23]

4.2.2 Parallel gamification goal: busting myths about nuclear power

As each jobseeker moves through the quiz, general information is offered about nuclear energy and facts meant to neutralize myths and misinformation associated with nuclear power such as:

- Misinformation: Americans get the majority of yearly radiation dose from nuclear power plants
- Misinformation: electricity generated with nuclear energy costs more
- Misinformation: Homer Simpson
- Misinformation: most Americans don't support nuclear power
- Misinformation: a nuclear reactor can explode like a nuclear bomb
- Misinformation: nuclear energy is bad for the environment
- Misinformation: there is no solution for nuclear waste
- Myth: a higher education degree in science and/or engineering is needed
- Myth: nuclear energy is not safe
- Myth: nuclear is about bombs and weapons

- Myth: nuclear is dangerous—your skin will turn green
- Myth: nuclear jobs are only for nerds
- Myth: nuclear provides proliferation channels that are dangerous
- Myth: you must be a “rocket scientist” to work in nuclear

4.2.3 Parallel gamification goal: supporting positive impressions of nuclear energy

A multinational survey from Potential Energy, Clear path, Replanet, and Third Way [24] found that there is widespread international and bipartisan public support for advanced nuclear energy technologies. 61% of respondents said the U.S. should be spending more on nuclear energy research and development [25]. 3 in 5 Americans support nuclear power plants as a source of electricity [25]. 96% of plant neighbors, as well as 86% of the public, believe that nuclear energy will be important in meeting the nation’s electricity needs and 86% of people living near a nuclear power plant would accept adding a Small Modular Reactor (SMR) to the plant [25]. A 2023 Gallup poll found that Americans’ support for nuclear energy is the highest it’s been in a decade [26]. This information and statistics can be shared within the context of the quiz.

4.2.4 Parallel gamification goal: supporting coal-to-nuclear transitions

Per the *Gateway for Accelerated Innovation in Nuclear (GAIN) Coronado Generating Station Nuclear Feasibility Study* [18], communities supporting fossil fuel energy generation such as coal plants are expected to be the first affected with the U.S. transition to clean energy. Outreach to workers in coal communities is critical and necessary to convey that the skills those workers currently possess are applicable in the nuclear economy. Coal to nuclear transitions would dramatically increase the supply of firm and dispatchable clean electricity to the grid and emphasized that there are corresponding jobs that will allow the workforce to transition easily to nuclear. The technology assessments completed on the coal plants in the study identified “candidate nuclear technologies aligned with current mission and business objectives.” The economic impact statement developed with these select sites included two scenarios: 1) as the current coal plant operations and 2) as a nuclear generation plant. Regardless of the size of the nuclear plant, “retiring the coal plant with no replacement generation would have significant negative impacts on the regional economy.” The second scenario indicated “several potential nuclear deployment scenarios would have a net positive effect on the regional economy.”

As the U.S. moves toward clean energy and reduced carbon emissions, the *Department of Energy, Investigating Benefits and Challenges of Converting Retiring Coal Plants into Nuclear* [20] report states former coal plant locations would “enable these new nuclear deployments to utilize some of the coal sites’ infrastructure and would create high-paying jobs in existing energy communities. to a nuclear power plant.”

NEXT24 recognizes that tools are already being developed to support the transition of fossil fuel workers to nuclear power jobs, however, recommend that gamification tools be added to the mix to increase the effectiveness of these resources. In the *2024 Coal to Nuclear Transitions* report [14], an online application to help estimate economic impacts down to a county level could be a follow-on informational link in the NEXT24 quiz. The app directly requests the size of the existing coal plant and the proposed nuclear plant in the community and then calculates the number of additional jobs that will be created/needed. Most of the positions in the coal industry (e.g. electrician) map one: one with positions in the nuclear industry and on-the-job training will be provided to fill gaps and familiarize workers with operations at any given location as with any worker transition to another industry. Gamification would be an excellent way to inject some fun and enjoyment to an otherwise dry task that is likely discouraging for current fossil energy

workers to even research. Strongly emphasizing and informing that a good job in fossil power could evolve to an even better job in the nuclear industry is one of the NEXT24 goals.

4.2.5 Social media platform selection

Jobseekers may use online tools to match current skills or “find that dream job” (OneTOnline is one example [27]). However, this process is usually not intuitive and is stressful for some. Some online tools provide categories of information such as training, salary, location, job duties, etc., but how to find those tools to begin with? A Google search on “nuclear job skills” yields only nuclear engineer results. The primary delivery will be through social media platforms, but the jobseeker quiz should also be passed to state and local government agencies, industry, and universities. Meetings could be scheduled (as possible) with state governments and Congressional staffers for discussion on the call-to-action. The prototype “**What Nuclear Job is Right for You?**” jobseeker quiz will be provided to NEI and other organizations to further build out and promote and deliver using additional venues, but NEXT24 recommends beginning our campaign using social media platforms. The most used social media platform is still Facebook [28][29], but Snapchat, LinkedIn, Instagram, and X/Twitter offer different functionality and have varying levels of popularity. Targeting multiple platforms will provide a broad range of engagement. Considering the age distribution of users informs initial quiz deployment options [29]:

18-29 years:

Snapchat: Used by 41% of this age group.

TikTok: Popular among 35% of young adults.

Instagram: Engaged by 32% of users in this range.

30-39 years:

LinkedIn: Utilized by 34% of individuals in this age bracket.

X/Twitter: Also, at 34% usage.

Snapchat: Remains relevant for 33% of this group.

Instagram: Still popular, with 32% engagement.

40-49 years:

LinkedIn: Used by 25% of this demographic.

Facebook: Remains relevant at 22% usage.

X/Twitter: Engaged by 21% of users in this age range.

50-59 years:

Facebook: Remains relevant as the go to platform at 29% usage.

Given our target audience (see Section 5), NEXT24 recommends initial deployment on LinkedIn and Snapchat.

4.3 Request for Proposal for Advertising Agencies

For this multi-prong effort to HYPE nuclear, WIN NEXT24 recommends the nuclear industry seek innovative marketing and advertising professionals to bring this vision to life through a disruptive and comprehensive campaign that can make a significant impact in the way our industry engages with the public and potential talent. The campaign should embody the vision of nuclear as the industry of choice and utilize modern, tech-savvy and unexpected strategies to hype, disrupt, and connect with jobseekers outside of the current nuclear bubble.

To enable momentum and continuity, NEXT24 has drafted a request for proposal (RFP), *Transformational Promotional Experience for the Nuclear Industry's Workforce Ambitions* (see appendix A) that can be used to solicit proposals.

The selected marketing firm will be responsible for:

- **Campaign Concept Development:** Propose a campaign concept that aligns with our vision. This should include:
- **Theme and Messaging:** Define the overarching theme and key messages that will resonate with the public.
- **Commercial Production:** Develop a concept for a commercial that effectively normalizes and hypes nuclear while captivating viewers.
- **Experiential Marketing with Gamification Elements:** Outline an experience-based strategy to connect with job seekers. Describe how gamification can be integrated into the campaign to engage new audiences.
- **Implementation Plan:** Provide a detailed plan for executing the campaign, including timelines, key milestones, and deliverables.

*NEXT24's HYPE : DISRUPT : CONNECT initiative has been enthusiastically supported by several utility Chief Nuclear Officers (CNO)s, with the most popular element of the proposed campaign being the idea of a Superbowl commercial. The resulting discussion solidified the idea that the nuclear industry **should** have a Superbowl commercial and that this is feasible.*

Proposals will be evaluated based on the following criteria:

- ✓ Creativity and Innovation: The originality and creativity of the proposed campaign concept.
- ✓ Alignment with Vision: How well the proposed campaign aligns with our vision and objectives.
- ✓ Experience and Expertise: The firm's relevant experience and expertise in delivering similar projects.
- ✓ Feasibility and Execution: The feasibility of the proposed plan and the firm's ability to execute the plan effectively.
- ✓ Budget and Value: The value provided in relation to the proposed budget.

5 Know the audience

5.1 Who is the nuclear industry looking for? Jobs to actively recruit for nuclear!

For the Next Generation Nuclear construction and operational sites, many positions for skilled labor, project managers, accounting, and other positions like those in other industries (e.g. automotive, airline, oil and gas, etc.) are required. The U.S. Bureau of Labor Statistics lists more than 140 occupations needed for nuclear power generation category alone [30]. To add another level of complexity, the job titles are not standardized. A basic example that illustrates this point: some companies advertise for an administrator, while other refer to the same position as a secretary or office worker.

NEA and IAEA have documented the current workforce and the number of jobs required to sustain operations [31]. NEI is developing its Nuclear Energy Industry Workforce Strategic Plan [32]. If you know where to look, you can find the Center for Energy Workforce Development (CEWD)'s Careers in Nuclear page [33]. You can look for jobs across the world at nuclearjobs.org. You can also sign up for Nuclear Matters [34]. The U.S. Department of Energy (DOE) released an information guide and its DOE's

Stakeholder Guidebook for Coal-to-Nuclear Conversions that supports reskilling coal workers for nuclear jobs for communities retiring coal power plants and replacing them with nuclear power plants [35][13]. These provide information on the jobs the nuclear industry needs to fill. Current predictions indicate the nuclear industry will need the following skilled workers [36]:

| <u>Skilled Trades</u> | <u>Engineering, Technicians & Radiologists</u> | <u>Professionals</u> |
|------------------------------|---|-----------------------------|
| Carpenters | Chemists | Accountants |
| Electricians | Chemical engineers | Cybersecurity specialists |
| Operators of heavy equipment | Radiation protection specialists | Communicators |
| Masons | Nuclear engineers | Health physicists |
| Pipefitters | Reactor operators | Lawyers |
| Sheet metal workers | Engineers and scientists | Subject matter experts |
| Welders | Safety specialists | Policy analysts |
| Mechanics | Environmental impact specialists | Entrepreneurs |
| Project Managers | | Financial managers |

5.2 What are jobseekers looking for and who are they?

The intended audience of the product will be technology and vocational schools, fossil power workers, military and veterans, trade schools and trade groups, autoworkers, rural communities, leadership and management candidates—adults who do not possess nor are planning on obtaining a four-year science, technology, engineering and mathematics (STEM) degree.

Research provided the following current generation distribution: GenZ, 5%; Millennials, 35%; GenX, 33%; Baby Boomers, 25%; Traditionalists, 2% [37]. Based on the age range selected, NEXT24 are targeting Millennials for this quiz version, with potentially some GenZ participation.

According to Apollo Technical [38], over 39% of people who are considering career changes are motivated by higher salaries. Only 14 % of Americans believe their current job is great and would not change to a new job. Around 70% of all working-age people are actively looking for a job change. NEXT24 recommends the nuclear industry appeal to these jobseekers, especially mid-career people, and convince those seeking a new career that the nuclear energy industry is an opportunity for them. The nuclear industry needs a workforce with experience—even if the experience is not in nuclear.

What are the criteria that people use when considering a job or career change? Per *Google's web search* (accessed July 2024), people think about four primary parameters when changing jobs:

1. Almost half are looking for a higher salary – most are looking for an increase between 3 and 5%. Better benefits are also a decision point.
2. Many are moving to advance personal career goals and achieve personal growth. Workers want more opportunities for advancement and are looking for companies and careers where workers can grow skills.
 - a. That said, workers know re-education may be necessary when job changes and careers occur, but workers are usually looking for opportunities where current skills can be applied.
 - b. People want a “purpose”—workers want to know that the job they have contributes to the larger good—such as clean energy. Clean energy jobs are increasing.
3. A large proportion are looking for more flexibility in the job for a better life-work balance.

4. Finally, the location of the job and the working environment are extremely important to the decision for or against a new position.

Our recruiting tools and methods should appeal to these jobseekers.

5.2.1 An important note on life-work balance

The nuclear industry needs to attract and retain passionate, competent, motivated nuclear workers in all disciplines to produce a well-qualified workforce supporting new plant construction and current reactor fleet operation. To retain our highly valuable workforce, the nuclear community needs to improve and empower our culture. However, current evidence is that working at a nuclear utility does not offer a lot of flexibility or improve life-work balance.

Within the context of this work, the NEXT24 cohort strongly supports the need to develop and implement more job flexibility to improve life-work balance and attract and retain our best, current, and future workforce. The energy workforce lost many jobs during the pandemic, which additionally illustrates the level of flexibility within the current industry. Our request to the nuclear industry is to consider the following actions in support of our efforts to expand and build the influence of the nuclear energy sector in the U.S. job market:

- Evaluate work shifts/job rotation options that support a variety of lifestyles and offer better life-work balance, including work rotations, part time employment, and job sharing. Include a focus on options to retain workers that want more flexibility (e.g., families with young children).
- Emphasize the value of a diverse workforce in recruiting efforts and train hiring managers to recognize and overcome unconscious bias. Producing clean energy requires a wide range of skills and talent; thus, the nuclear industry need a diverse workforce.
- Examine the opportunities and innovate solutions for remote and hybrid work assignments.
- Establish cross-training opportunities to widen opportunities for advancement within the company and the nuclear community.

6 The Difference

What makes this campaign different from the traditional status quo? Why will this campaign be effective?
This campaign will generate the momentum (HYPE) needed to attract skilled workers from outside of the nuclear community and will help to advance and retain those already within our nuclear community. Our proposed modern delivery, communications plan, and gamification tools (DISRUPT) will attract and educate an audience outside of the nuclear community and target workers in other highly regarded industries such as oil and gas, airlines, banking, healthcare, or even coal communities. Jobseekers may not realize current skills and experience are applicable to working in a nuclear plant or utility, and our tools and methods will educate and bust myths using easy and simple messaging (CONNECT).

There are several existing tools for jobseekers, however, the tools are not intuitive nor easy to navigate. Some have information hidden under many layers in a database, while others require a specific key word match to identify a job or career. Our tools will supplement existing tools by CONNECTing jobseekers to the existing content.

7 Development Schedule and Status of Activities

- ✓ Prototype quiz development 2 months--complete
- Licensed development 3 months--tbd

- ✓ Prototype quiz test: 2 month--complete
- ✓ Prototype quiz release 6 months—complete
- ✓ Request for Proposal development: 2 months – complete
- Market consultation for advertising agency: 1 month--tbd
- Review proposal bids and estimates: 2 months-tbd
- CNO budget confirmation: 6 months--tbd
- Award proposal: 6 months--tbd
- Requirements meeting with stakeholders, WIN NEXT24, developers
- Developers' meetings: PM, developers
- Test and Integration: developers, independent testers
- Execute: Superbowl 2026

8 Outcomes & Estimated Reach

Other entities identified such as WIN Global, WIN CommComm, DOE communications, NEI, universities, commercial companies, national laboratories, and government agencies to support the campaign--build the HYPE, DISRUPT the traditional recruitment, and CONNECT jobseekers with relevant information.

The future of the quiz will reside with the licensee of the software.

The request for proposal success will be subject to those entities that have the authority and resources to carry this forward such as NEI and commercial entities. The estimated reach for the Superbowl commercial is expected to exceed 210 million people in the U.S. and 62.5 million worldwide assuming the same people watch in 2025.

9 What is not included in the scope of this work?

Other aspects that are needed that are beyond the scope of the proposed activity include: specification and development of additional worker training and additional courses at colleges/universities, skill set specifications for job categories and evaluating gaps on specific skills for the nuclear industry, supply chain positions, nuclear power plant operations, and community level jobs.

The deliverables for this WIN NEXT24 Capstone project are an executive summary, this Capstone report, the Request for Proposal for the advertisement agency call (provided in Appendix A), and a prototype of the “**What Nuclear Job is Right for You?**” jobseeker quiz available for one year at the QR code provided in Section 4 of this report.

The WIN NEXT24 Capstone Report bibliography (see Appendix B) includes references for obtaining additional position descriptions, salaries, career paths, geographic locations, and websites for other nuclear positions not currently in the “**What Nuclear Job is Right for You?**” jobseeker quiz. The request for proposal will be an outline for the Superbowl commercial, however, funding, period of performance, and detailed scope need to be further addressed.

Follow on ideas for this campaign also include but are not limited to:

- Adding video illustration or animation within the quiz and supporting visuals
- Provide specific gamification focused on broadening views of nuclear power qualifications

- Consider different learning styles in developing gamification package contents (visual, kinesthetic, reading/writing, auditory)
- Add supporting gamification elements, such as a “day in the life” experience illustrating selected nuclear jobs
- Develop a reverse lookup for job types by aptitude or experience or skills
- Development of data around why people choose a career in nuclear to better leverage those themes
- Discuss applications and distribution of the materials through State and local governments

10 Your Call to ACTION to do NOW

The WIN NEXT2024 cohort challenges the nuclear industry to *inspire, attract, and retain* talented professionals, tradespeople, and leaders to choose a nuclear career that provides stability, higher pay, challenging and interesting work to realize the world’s clean energy goals with modern tools. The NEXT24 cohort invites YOU to **HYPE** nuclear jobs, **DISRUPT** the traditional status quo for attracting talent, and **CONNECT** job seekers with resources to make informed decisions about careers in nuclear energy.

JOIN THE MOVEMENT
&
BE A PART OF THE SOLUTION!



APPENDIX A

NEXT24 REQUEST FOR PROPOSAL

This document is intended to be used by the nuclear community to solicit professional support in developing a comprehensive communications plan for nuclear jobs and recruiting.

This page is intentionally blank.

REQUEST FOR PROPOSAL

NUCLEAR EXECUTIVES OF TOMORROW 2024 (NEXT24)

1. INTRODUCTION

As the 2024 class of Nuclear Executives of Tomorrow (NEXT24), an executive-level leadership development program created by U.S. Women in Nuclear in conjunction with the Nuclear Energy Institute (NEI) and nuclear executives across our industry, we have embarked on a mission to revolutionize how we attract talent to our industry to support our industry's 2050 generation and workforce vision.



2. PROJECT VISION

NEXT24's vision is to implement a collaborative nuclear industry workforce promotional effort that transcends the nuclear bubble and hypes nuclear as the industry of choice for jobseekers. Our vision is to create a hype through creative and targeted information sharing that brings attention to nuclear energy as a job option for people that never, in their wildest dreams, thought of working in the nuclear sector. We want to inspire people about nuclear energy, hype nuclear, and make nuclear energy a part of our social consciousness.

We are now seeking innovative marketing and advertising professionals to bring this vision to life through a disruptive and comprehensive campaign that can make a significant impact in the way our industry engages with the public and potential talent. The campaign should embody our vision of nuclear as the industry of choice and utilize modern, tech-savvy and unexpected strategies to hype, disrupt, and connect with jobseekers outside of the current nuclear bubble.

3. OBJECTIVES

Hype the nuclear industry as more than just an energy sector, but a movement. We want to make nuclear energy a positive and inspirational part of our social consciousness to attract the best and brightest problem-solvers and professionals to join us in this exciting journey. Our inspiration is Jamie Lee Curtis and her Hype Women message.

Disrupt the status quo by delivering disruptive strategies that go beyond conventional methods and typical industry channels to reach job seekers and dispel persistent myths surrounding nuclear.

Connect jobseekers to nuclear through an engaging, multi-level experience that stands out in the marketplace. Make nuclear a highly desirable job option for all jobseekers, from administrative, finance, and business professionals to engineers, electricians, reactor operators, and welders.

3. TARGET AUDIENCE

The intended audience of the product will be technology and vocational schools, fossil power workers, military and veterans, trade schools and trade groups, autoworkers, rural communities, leadership and management candidates, adults who are not getting a 4-year STEM degree.

Research provided the following current generation distribution (Purdue Global): GenZ 5%; Millennials, 35%; GenX, 33%; Baby Boomers, 25%; Traditionalists, 2%. Based on the age range selected, NEXT24 recommends targeting Millennials for this version of the Quiz as millennials are not the largest workforce generation, with potentially some GenZ participation.

According to Google's sources across the web, people think about 4 things when changing jobs:

1. Almost half are looking for a higher salary — most are looking for an increase between 3 and 5%. Better benefits are also a decision point.
2. Many are moving to advance their personal career goals and achieve personal growth. People want more opportunities for advancement and are looking for companies and careers where they can grow. That said, workers know they will have to re-educate themselves when they change jobs and careers, but they are usually looking for opportunities where their current skills can be applied.

3. A large proportion are looking for more flexibility in their job for a better life-work balance.
4. Finally, the location of the job and the working environment are extremely important to the decision for or against a new position.

Our campaign should provide direct information on these topics to current non-nuclear workers, provide them with an assessment on how their current skills can be applied to a job in nuclear where they will receive higher pay, better benefits, job security, a family-friendly local culture with a great work environment, and provide them contacts and a call to action to get started. We envision that one of our primary delivery methods will be through social media platforms, but the package should also include other, more broad media approaches.

4. SCOPE OF WORK

The selected marketing firm will be responsible for:

Campaign Concept Development: Propose a campaign concept that aligns with our vision. This should include:

- **Theme and Messaging:** Define the overarching theme and key messages that will resonate with the public.
- **Commercial Production:** Develop a concept for a commercial that effectively normalizes and hypes nuclear while captivating viewers.
- **Experiential Marketing with Gamification Elements:** Outline an experience-based strategy to connect with job seekers. Describe how gamification can be integrated into the campaign to engage new audiences.

Implementation Plan: Provide a detailed plan for executing the campaign, including timelines, key milestones, and deliverables.

Measurement and Analytics: Describe how the effectiveness of the campaign will be measured and reported.

5. PROPOSAL REQUIREMENTS

Interested firms should submit a proposal that includes the following:

Executive Summary: Brief overview of your firm and its capabilities.

Relevant Experience: Case studies or examples of previous work that demonstrate your ability to deliver innovative and effective marketing campaigns.

Proposed Campaign Concept: Detailed description of your proposed campaign concept, including the elements outlined in the Scope of Work.

Project Plan: Outline your approach to managing and executing the project, including timelines and deliverables.

Team Credentials: Information about the team that will be working on the project, including their experience and expertise.



Budget Estimate: Provide a budget estimate for the proposed campaign, including a breakdown of costs which considers a range for each line item.

References: Contact information and examples from previous clients and projects.

6. EVALUATION CRITERIA

Proposals will be evaluated based on the following criteria:

- ✓ **Creativity and Innovation:** The originality and creativity of the proposed campaign concept.
- ✓ **Alignment with Vision:** How well the proposed campaign aligns with our vision and objectives.
- ✓ **Experience and Expertise:** The firm's relevant experience and expertise in delivering similar projects.
- ✓ **Feasibility and Execution:** The feasibility of the proposed plan and the firm's ability to execute it effectively.
- ✓ **Budget and Value:** The value provided in relation to the proposed budget.

7. SUBMISSION INSTRUCTIONS

Proposals should be submitted electronically to [TBD] by [TBD]. For any questions or clarifications, please contact [TBD] at [TBD].

8. TIMELINE

RFP Issue Date: [Date]

Proposal Submission Deadline: [Due Date]

Selection of Finalists: [Date]

Finalist Presentations: [Date]

Award Notification: [Date]

Project Kickoff: [Date]

9. CONFIDENTIALITY

All information provided in response to this RFP will be treated as confidential and used solely for the purpose of evaluating the proposals.

10. TERMS AND CONDITIONS

[Reference terms and conditions that apply.]



We look forward to receiving your proposal and partnering with you to bring our vision to life.

Prepared by:

Ashley Kovacs, Constellation

Bonnie Hong, Idaho National Laboratory

Emily Tarle, Ontario Power Generation

Hannah Arrington, Framatome Inc.

Janice Cruz, Florida Power & Light

Karen Kessler, Energy Northwest

Lisa Davies, Fluor Corporation

Liz Williford, Southern Company

Michelle Zietlow-Miller, Idaho National Laboratory

Rose Montgomery, Oak Ridge National Laboratory

Sarah Ortman, General Electric-Hitachi

Stephenie Pyle, Entergy

This page is intentionally blank.

APPENDIX B

BIBLIOGRAPHY

- [1] <https://www.reuters.com/sustainability/climate-energy/over-110-countries-set-join-cop28-deal-triple-renewable-energy-2023-12-02/>
- [2] <https://www.ncsl.org/energy/nuclear-power-and-the-clean-energy-transition>
- [3] <https://www.woodmac.com/press-releases/2024-press-releases/global-nuclear-smr-project-pipeline-expands-to-22-gw-increasing-more-than-65-since-2021/>
- [4] <https://www.uschamber.com/workforce/data-deep-dive-the-workforce-of-the-future>
- [5] Department of Energy (DOE) “Pathways to Commercial Liftoff: Advanced Nuclear” report, <https://liftoff.energy.gov/>
- [6] NEA (2024), The NEA Small Modular Reactor Dashboard: Second Edition, OECD Publishing, Paris
- [7] <https://nucleus.iaea.org/sites/smr/Shared%20Documents/IAEA%20SMR%20Platform%20Annual%20Report%202023.pdf>
- [8] <https://www.facebook.com/mms/photos/oh-no-ive-lost-pretzel-guy-can-you-help-me-spot-him-orange/10151267849776957/>
- [9] <https://www.noom.com/blog/what-is-noom-how-does-noom-work/>
- [10] <https://dacowits.defense.gov/Portals/48/Documents/General%20Documents/RFI%20Docs/Dec2018/USA%20RFI%203%20Attachment.pdf?ver=2018-12-08-000554-463>
- [11] <https://gamificationdoesitwork.wordpress.com/2017/03/22/mms-find-the-pretzel/>
- [12] <https://growthmodels.co/noom-marketing/>
- [13] J. Hansen et al. Investigating Benefits and Challenges of Converting Retiring Coal Plants into Nuclear Plants, INL/RPT-22-67964 available at <https://fuelcycleoptions.inl.gov/SiteAssets/SitePages/Home/C2N2022Report.pdf> , 2022.
- [14] Coal-to-Nuclear Transitions, An Information Guide available at https://www.energy.gov/sites/default/files/2024-04/24_DOE-NE_Coal%20to%20Nuclear%20Report_04.01_digital%20%281%29.pdf , Department of Energy, 2024.
- [15] Estimating Economic Impacts of Repurposing the Coronado Generating Station with Nuclear Technology
- [16] <https://www.energy.gov/ne/coal-nuclear-transitions#:~:text=2022%20DOE%20report%20finds%20replacing,lung%20cancer%2C%20and%20heart%20diseases.>
- [17] <https://gain.inl.gov/our-work/transitioning-to-nuclear/gains-coal-to-nuclear-efforts/>
- [18] https://gain.inl.gov/content/uploads/4/2024/06/Coronado-Generating-Station-Summary-Report_INLRPT-23-72901.pdf
- [19] https://gain.inl.gov/SiteAssets/Coal2Nuclear/StJohn_econ.impacts.pdf
- [20] Department of Energy, Investigating Benefits and Challenges of Converting Retiring Coal Plants into Nuclear report (<https://www.terraxis.org/news-and-events/investigating-benefits-and-challenges-of-converting-retiring-coal-plants-into-nuclear-plants#:~:text=U.S.%20Department%20of%20Energy%2C%20Systems%20Analysis%20and%20Integration,->

- J.&text=This%20DOE%20report%20find%20hundreds,and%20significantly%20improving%20environmental%20conditions.)
- [21] (https://d11n7da8rpqbjy.cloudfront.net/senuclear/113083672585E4_Carolinas_Economic_Impact_Report_Final.pdf?kuid=20054074-b839-4504-a27e-223fbd8682ae&kref=5K1FBA9TJRdT)
 - [22] <https://www.energy.gov/ne/articles/advantages-and-challenges-nuclear-energy>
 - [23] https://d11n7da8rpqbjy.cloudfront.net/senuclear/113083672585E4_Carolinas_Economic_Impact_Report_Final.pdf?kuid=20054074-b839-4504-a27e-223fbd8682ae&kref=5K1FBA9TJRdT
 - [24] <https://thirdway.imgix.net/The-World-Wants-New-Nuclear.pdf>
 - [25] <https://ecoamerica.org/american-climate-perspectives-survey-2022-vol-iii-blog/>
 - [26] <https://news.gallup.com/poll/474650/americans-support-nuclear-energy-highest-decade.aspx>
 - [27] <https://www.onetonline.org/skills/soft/>
 - [28] <https://www.facebook.com/Meta/>
 - [29] <https://sproutsocial.com/insights/new-social-media-demographics/>
 - [30] <https://data.bls.gov/projections/nationalMatrix?queryParams=221113&ioType=i>
 - [31] Measuring Employment Generated by the Nuclear Sector, a Joint Report by the Nuclear Energy Agency and the International Atomic Energy Agency, 2018, available at https://inis.iaea.org/collection/NCLCollectionStore/_Public/49/108/49108310.pdf.
 - [32] <https://www.nei.org/news/2023/a-nuclear-workforce-growing-and-sustainable>
 - [33] Center for Energy Workforce Development (CEWD)’s Careers in Nuclear page
 - [34] U.S. Department of Energy (DOE) Nuclear Matters www.nuclearmatters.com/ website
 - [35] U.S. Department of Energy (DOE) <https://www.energy.gov/ne/articles/coal-nuclear-transitions-information-guide>
 - [36] Nuclearjobs.org website accessed July 2024.
 - [37] <https://www.purdueglobal.edu/education-partnerships/generational-workforce-differences-infographic/>
 - [38] Apollo Technical website, career change statistics available at apollotechnical.com, accessed March 2024.
 - [39] 2023 NERC Long Term Reliability Assessment https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_2023.pdf
 - [40] <https://www.terrapraxis.org/news-and-events/investigating-benefits-and-challenges-of-converting-retiring-coal-plants-into-nuclear-plants#:~:text=U.S.%20Department%20of%20Energy%2C%20Systems%20Analysis%20and%20Integration,-J.&text=This%20DOE%20report%20find%20hundreds,and%20significantly%20improving%20environmental%20conditions>
 - [41] <https://www.goodenergycollective.org/policy/host-communities-and-nuclear-energy-benefits-for-some-risks-for-others>
 - [42] <https://fuelcycleoptions.inl.gov/SiteAssets/SitePages/Home/C2N2022Report.pdf>
 - [43] <https://inl.gov/content/uploads/2023/07/Economic-Impact-Summary-2023-FINAL.pdf>
 - [44] Travis Seargeoh Emile Carless, “Framing a New Nuclear Renaissance Through Environmental Competitiveness, Community Characteristics, and Cost Mitigation Through Passive Safety” (Carnegie Mellon University, May 2018), <https://doi.org/10.1184/R1/6717320.v1>.

- [45] “POLL: Strong Local and Statewide Support for Diablo Canyon Nuclear Power Plant.” *Carbon Free California*, 19 May 2022.
- [46] <https://ne.ncsu.edu/news/2024/southeast-united-states-leads-in-nuclear-energy-production/#:~:text=The%20total%20annual%20economic%20impact,tax%20revenues%20to%20host%20communities.>
- [47] <https://world-nuclear-news.org/Articles/Economic-impact-of-nuclear-to-southeast-USA-highli#:~:text=%22Because%20of%20such%20strong%20multiplier,region%2C%22%20the%20report%20concludes.>
- [48] (https://d11n7da8rpqbjy.cloudfront.net/senuclear/113083672585E4_Carolinas_Economic_Impact_Report_Final.pdf?kuid=20054074-b839-4504-a27e-223fbd8682ae&kref=5K1FBA9TJRdT)
- [49] <https://www.nei.org/member-center/sharing-the-narrative/talking-points/accelerating-advanced-technology>
- [50] <https://www.nei.org/member-center/sharing-the-narrative/backups/advocating-for-nuclear/generation-toolkit>