

A WEEKLY PUBLICATION OF

UXC.COM

THE LATEST DEVELOPMENTS IN SPENT FUEL MANAGEMENT AND TRANSPORTATION

East Lincolnshire – One of Three GDF Search Areas in the UK – Withdraws from the Siting Process

As expected, Lincolnshire County has formally withdrawn from the siting process to identify a geological disposal facility (GDF) for higher-activity radioactive waste in the United Kingdom. The county council's executive board voted unanimously to withdraw from the process. Nuclear Waste Services (NWS), the UK organization responsible for developing a GDF, announced the development in a June 3 statement. Their decision leaves two communities in Cumbria as potential areas for a GDF.

NWS has been engaging with communities in the Search Area in Lincolnshire since the establishment of a Working Group in October 2021 and the subsequent creation of a Community Partnership in June 2022. NWS is required to identify a suitable site in a willing host community, so if the community does not express support for a GDF, it will not be built there.

Simon Hughes, NWS Siting and Communities Director, said, "NWS has to date granted over £2 million (US\$2.7 million) to support local community projects in the area and we are pleased to have left a lasting positive legacy for local people. We will now take the immediate steps needed to close the Community Partnership and the communities of Withern and Theddlethorpe, and Mablethorpe will leave the GDF siting process."

Earlier this year, NWS narrowed its focus to three potential areas, one of which was East Lincolnshire. The remaining two search areas are Mid Copeland and South Copeland in Cumbria (*SF* No. 1548 February 7, 2025). NWS will continue engagement with the two Community Partnerships in these areas. and remains open to new communities joining the siting process.

For over three years, NWS had been considering the former Theddlethorpe gas terminal as a possible suitable location for the surface facilities. In November 2024, however, NWS acknowledged that "competing interests in the gas terminal site have matured and it is important that we factor these into our approach." These competing interests were from other energy industries, including a carbon capture and storage facility, a gas-fired power station, and a location to bring electricity cables ashore from North Sea windfarms.

NWS began to consider "other options" for the GDF surface site, which included expanding the search to the electoral wards of Mablethorpe and Withern & Theddlethorpe. The new Area of Focus in Lincolnshire comprises approximately four square kilometers of land between Gayton le Marsh and Great Carlton. This shift prompted the East Lindsey local government to withdraw from the process. Council member Craig Leyland said in a statement, "Clearly this is land that has not had any previous industrial use and is prime agricultural land nestling close to the Lincolnshire Wolds Area of Outstanding Natural Beauty. This is in stark contrast to the 'brownfield' location at Theddlethorpe." He added, "The use of a brownfield site on the coast where a former facility had operated for over 40 years without local objection is completely different to a green field site in open countryside. The new site would also need attendant connecting infrastructure in the same sensitive countryside that the pylons would be scarring."

East Lindsay District Council's executive board formally withdrew on April 2. (SF No. 1556 April 4, 2025). With Lincolnshire County Council now out of the process, the area is no longer under consideration for a possible GDF.



NWS will continue to conduct a range of desktop studies and ground surveys, and to engage with landowners in the two remaining locations in Cumbria. The current expected timeline is as follows:

- December 2025 to Spring 2026 Submit a decision on the communities that will move forward to deep boreholes for more detailed investigations in December of this year, to enable the Secretary of State to decide in Spring 2026.
- Autumn/Winter 2028 Where applicable, reduce from multiple Areas of Focus within a community (for example, where NWS may be looking at two separate

potential surface areas) to a single preferred Area of Focus.

- Spring 2025 to Spring 2028 Prepare consent applications for site characterization. Although the exact locations are not yet determined, investigations will occur both on land and in territorial waters; preparing these applications will take several years. NWS plans to publish further details and offer opportunities for public engagement in 2026.
- Spring/Summer 2028 Current estimated date for consent applications related to site characterization to the appropriate regulators.
- 2030 Estimated start of site characterization activities. If the required consents are granted, NWS will begin investigations at sea and on land to further assess the suitability of potential GDF host sites.

After site characterization work is completed, NWS will enter the next major phase: selecting a final site and seeking regulatory approvals for the GDF. Before NWS can apply for regulatory approvals – including a new DCO and environmental permit, as well as a nuclear site license – a positive Test of Public Support (ToPS) must be achieved in the host community.

According to current planning assumptions, a GDF will be available for intermediate-level waste disposal in the 2050s, with emplacement of high-level waste and spent fuel expected to begin in 2075. Constructing, operating, and closing the facility will take 150 years or more.

Current estimates suggest that around 750,000 cubic meters of radioactive waste and nuclear materials will be disposed in the GDF. The cost of design and early construction to prepare the facility to receive waste in the 2050s is estimated to be in the region of £12 billion (US\$16.3 billion), based on 2017/2018 dollars. The total life cycle cost of the program spanning 175 years – spanning approximately 175 years and covering design, construction, operation, and closure – is estimated to range between £20 to £53 billion (US\$27.1 to \$71.8 billion), spread out over the lifetime of the program.

By the 2040s, the annual cost of storing the waste destined for the GDF is estimated to be about £70 million (US\$94.8 million). These costs could rise over time as storage facilities and containers need to be replaced or repackaged.

Top Story

NEA launches the WISARD project in Paris

The Nuclear Energy Agency (NEA) marked the official launch of the Joint Project on Waste Integration for Small and Advanced Reactor Designs (WISARD) at an event held May 12-14 in Paris, France. After a year of workshops and meetings to develop the project scope of work, 40

Industry Calendar

June 10-12, 2025 RadWaste Summit https://www.exchangemonitor.com/go/radwaste-summit-2025 The DeSoto Hotel, Savannah, GA

- July 27-August 1, 2025
 PATRAM 2025
 <u>https://www.inmm.org/page/patram2025</u>
 San Antonio Marriott Rivercenter, San Antonio, Texas
- July 20-23, 2025 ANS Advances in Nuclear Fuel Management <u>https://ans.org/meetings/anfm2025/</u> Sheraton Sand Key Resort, Clearwater Beach, FL
- August 24-28, 2025 INMM 66th Annual Meeting <u>https://inmm.org/news/annual-meeting</u> JW Mariott, Washington, DC
- November 9-12, 2025
 ANS 2025 Winter Conference and Expo (Including the IHLRWM topical embedded meeting)

 https://www.ans.org/meetings/view-wm2025

 Washington Hilton, Washington, DC
- January 27-29, 2026
 38th INMM Spent Fuel Management Seminar Washington, DC

Details are available at: https://www.uxc.com/c/data-industry/Calendar.aspx

participants from signatory organizations and third parties gathered to begin technical discussions that will guide the project's activities. The aim of the three-year international WISARD Joint Project is to examine the back-end implications of innovative nuclear fuel systems, focusing on key areas such as treatment and recycling, storage, transportation, and disposal.

NEA said that a core objective of the project is to assess the compatibility of new spent fuels and different waste streams with current back-end solutions, and pinpoint areas requiring future innovation.

With the renewed interest in small modular and advanced reactors in an increasing number of countries, the need to strategize for the back-end of the fuel cycle to support a responsible, long-term nuclear energy strategy is essential.

NEA Director-General William D. Magwood, IV emphasized in his opening remarks the importance of innovative waste management for new nuclear technologies. "As these technologies move forward, it is important that policymakers and the pubic have assurance as to what is going to happen with the nuclear waste these reactors generate and how they will be decommissioned. This is where coordinated international effort becomes very important. By bringing together governments, regulators, and the private sector, the WISARD project will look at how we can deliver answers to these questions."

The WISARD project brings together 12 signatory organizations across three continents representing national laboratories, research institutes, industry players and startups. These organizations include: Canadian Nuclear Laboratories (CNL), Saltfoss Energy (Denmark), VTT Technical Research Centre (Finland), Naarea (France), Korea Atomic Energy Research Institute (KAERI), Korea Hydro & Nuclear Power Company Ltd. (KHNP), Bykalla, (Sweden), United Kingdom National Nuclear Laboratory (UKNNL), Nuclear Waste Services (United Kingdom), Deep Isolation (United States), Electric Power Research Institute (EPRI, United States), and the Nuclear Energy Institute (NEI, United States). In addition, multiple third parties will contribute to implementing the project's work program.

Deep Isolation announced its participation in the project in a June 6 press release, noting that its participation builds on recent research presented at the 2025 Waste Management Symposia, where the company presented a paper titled, "Opportunities and Barriers for Optimizing Costs Across the Back End of the Advanced Nuclear Fuel Cycle. The paper underscores the importance of WISARD's work to integrate waste management into deployment strategies for small and advanced reactors from the beginning. It also highlights the strong demand across the nuclear industry for innovative products, like Deep Isolation's Universal Canister System (UCS), that can reduce costs and uncertainty for the industry across storage, transportation, and disposal.

Deep Isolation's UCS is a triple-purpose canister designed for safe storage, transportation, and deep geological disposal. It is compatible with both mined and borehole repositories and supports a range of advanced reactor waste streams, enabling flexibility in future waste disposition pathways.

News – International

JAVYS and *new*cleo sign JV agreement that paves the way to close the fuel cycle

JAVYS, the state-owned nuclear and decommissioning company in Slovakia, and European reactor developer *new*cleo have sign a shareholder agreement to establish a Center for Development of Spent Nuclear Fuel Utilization (CVP) as a joint venture company. The agreement represents a tangible step toward the construction of four advanced modular reactor IV, the Generic Type Lead Fast Reactor (LFR-AS-200) with a total output of 800 megawatts, at the decommissioned Jaslovské Bohunice site in Slovakia. JAVYS will own 51% of the joint venture company and *new*cleo 49%.

The reactors will be powered with mixed-oxide (MOX) fuel fabricated from existing Slovakian spent fuel extracted from the country's current reactor fleet. The aim is to reprocess the spent fuel in France and assemble new fuel rods at *new*cleo's planned MOX facility to be built in France, which would then be used to power the LFR-AS-200 units, thus creating a closed nuclear fuel cycle for the operation.

The new operating model establishes a complementary industrial synergy between thermal and fast reactors by leveraging the fast reactors' potential to use spent nuclear fuel and close the fuel cycle. *new*cleo intends to use this model as a blueprint for operations in other countries that have an existing nuclear fleet or legacy spent fuel as a way of managing in a sustainable manner what might otherwise be considered a waste product.

By adopting a model of multi-recycling through LFRs, existing spent nuclear fuel could power Europe's electricity needs for thousands of years while significantly reducing the volume of existing nuclear waste and its radiotoxicity. This would then significantly reduce the amount of long-lived nuclear material requiring disposal in deep geological repositories.

The joint venture will immediately begin working on a comprehensive feasibility study for deploying LFR-AS-200 reactors at the Bohunice site. In parallel, the parties will continue cooperating with the French government and nuclear fuel supply chain to develop and deploy spent fuel transportation and reprocessing solutions, as well as continuing to advance *new*cleo's fuel manufacturing facility in France.

Peter Gerhart, Chair of the Board of JAVYS said, "Our goal is to create a solution that will not only strengthen Slovakia energetically but will also be a model for the entire European region in the field of safe and efficient use of spent nuclear fuel."

Stefano Buoni, founder and CEO of *new*cleo said, "Today we are at the dawn of a new model for the nuclear energy industry, where public and private firms collaborate to close the fuel cycle. This project demonstrates that the future of nuclear energy lies in the intelligent utilization of existing resources. Spent nuclear fuel ceases to be a problem and instead becomes a solution for improving Europe's energy security and independence. Slovakia is thus becoming a pioneer in the field of closed nuclear fuel cycle."

*new*cleo believes the future of the nuclear industry is Advanced Modular Reactors – Small Modular Reactors that employ one of the Generation IV technologies. Among the six Generation IV categories, *new*cleo believes the Lead-cooled Fast Reactor technology is the most promising.

SÚRAO sends geological work plans to authorities for comment; launches Sentiment Maps project

SÚRAO, the Radioactive Waste Repository Authority in the Czech Republic, has sent geological work plans for investigations into possible locations for a deep geological repository (DGR) to the authorities for comment, the agency said in a June 2 press release. Once the plans are approved, exploration work can begin at the approved locations – Březový Potok in the Pilsen region, Horka and Hrádek in the Vysočina region, and Janoch in the South Bohemian region.

Sentiment Maps project launched

SURAO launched the Sentiment Maps project on June 1, which focuses on possible locations for the surface areas of the deep repository and accessing infrastructure at all four sites. People in all four candidate sites can take part in this project to mark important places in their location, draw attention to the specifics of the region, and point out concerns or problems.

SÚRAO Director Lukáš Vondrovic said, "We were inspired by other organizations and major structures. The solution of the surface area with the municipalities and the public is important to us, and I have always tried to ensure that people can get involved if they want. This is precisely the part of the project where it is possible, and it is also possible for us to meet some requirements [as] later there will be no room for solving the location of the area."

The sentiment maps do not only capture the location of the surface area itself, but also the opinions of citizens on the entire location. The results obtained from the maps can influence, for example, access roads and other infrastructure associated with the DGR.

"Sentimental maps will help us better understand how people perceive the place where they live and what their opinions are on the location of surface areas and their surroundings. Although this facility will only be at one, final, location, we must prepare the surface area at all considered locations in advance," says Markéta Dohnálková, head of the repository preparation department, who has been involved in the preparation of the surface area for a long time.

Sentiment maps are a simple and effective tool that allows people to express their opinions about a given location, as well as concerns and suggestions. Citizens may express their opinions through the application until June 30. SÚRAO and its contractors will carefully consider all reactions.

UK Parliament committee issues report critical of the pace of Sellafield cleanup

A new report by the UK House of Commons Public Accounts Committee (PAC) highlights the cost of the cleanup of the Sellafield Site, warning that the estimated £136 billion (US\$184 billion) cost of the project will rise even more if work is further delayed. In 2018, the PAC found that the government needed more control on Sellafield's nuclear challenges, and now warns that not enough progress has been made in addressing its most significant hazards.

One building, the Magnox Swarf Storage Silo (MSSS), has been leaking radioactive water into the ground since 2018.

The PAC calculates the current rate of leakage generates enough radioactive water to fill an Olympic-size swimming pool roughly every three years. A 2024 report by the National Audit Office (NAO) noted that the MSSS is leaking about 2,100 liters of radioactive water into the ground every day. The Nuclear Decommissioning Authority (NDA) claims that the radioactive particles are "contained" in the soil and do not pose a risk to the public. Work is ongoing to transfer the contents of the site into newer, safer facilities, but slow progress has delayed the estimated completion date into the late 2050s. The facility stores Magnox fuel cladding (or swarf) that was removed from spent fuel rods so that the fuel could be reprocessed (*SF* No. 1534 October 25, 2024).

Sellafield Ltd has missed most of its annual targets for retrieving waste from several buildings on the site, including the MSSS, the PAC found. As a result of Sellafield Ltd.'s underperformance, the MSSS will likely remain extremely hazardous for longer than expected. The PAC wants answers from the government on how it will hold the NDA and Sellafield Ltd accountable for improving the site's greatest hazards.

In addition to the safety concerns, the PAC warns of the impact delays in the cleanup program have on costs. Delays in the date for having a geological disposal facility (GDF) for the waste to ultimately be disposed has slipped from 2040 to the late 2050s, with every decade of delay meaning that Sellafield may need to build another storage building, each of which costs between £500 million to £760 million (US\$676.7 million to \$1 billion).

The PAC's report also finds indications of a "sub-optimal culture" at the site. Due to the very hazardous nature of many of Sellafield's activities, all employees and contractors at the site must feel free to express any concerns they have without fear of repercussions. The NDA paid £377,200 (US\$ 510,560) in 2023-2024 to settle employment-related claims.

Japan's regulator approves the use of high burnup fuel at Genkai 4

Kyushu Electric Power Company announced June 4 that it has received approval from the Nuclear Regulation Authority to introduce high burnup fuel at Unit 4 of the Genkai Nuclear Power Plant. Kyushu Electric submitted the application on December 28, 2022. The company applied to use high burnup fuel to reduce the amount of spent fuel generated from the reactor, since high burnup fuel can remain in the reactor for longer periods than the fuel currently used, thus reducing the amount of fuel that needs to be replaced during refueling outages.

The high burnup fuel is scheduled to be introduced in fiscal year 2026.

News – US

Argonne scientists work to make reprocessing viable through transmutation

Argonne National Laboratory (ANL) and Fermi National Accelerator Laboratory (Fermilab) have been selected to receive \$3.2 million from the United States Department of Energy Advanced Research Projects Agency-Energy (ARPA-E), ANL said in a June 2 press release. The funds are part of ARPA-E's Nuclear Energy Waste Transmutation Optimized Now (NEWTON) program, which aspires to make reprocessing of commercial spent fuel generated in the United States economically viable within 30 years.

During transmutation, the long-lived radioactive isotopes in the spent fuel are converted into shorter-lived isotopes. Technologies supported by the NEWTON program, such as transmutation, would accelerate the processing cycle of the US stockpile of spent nuclear fuel, improving safety and decreasing the capital expenditure needed for permanent longterm storage.

Particle accelerators offer the greatest potential of any existing technology to address the challenge posed by the 90,000 metric tons of waste in storage at US nuclear power plants. Superconducting cavities, which are specialized components stacked together in linear particle accelerators, can efficiently propel charged particles, like protons, to high speeds with energies near 1 billion electron-volts (GeV).

Michael Kelly, Argonne physicist and team leader, explained that these proton beams can be used to create a flux of neutrons from a heavy-element target – usually made of lead or bismuth – through a process called spallation. When directed at radioactive waste inside a reactor, the neutrons multiply, then essentially burn the spent fuel, turning it into a material that decays more quickly.

Most of today's accelerator cavities are made from pure niobium and cost several hundred thousand dollars each. They must be cooled with costly central cryogenic plants that use a considerable amount of liquid helium at a temperature between 2 and 4 kelvins. When units of six to eight cavities – known as cryomodules – are strung together, they resemble railroad freight cars in size.

Of the \$3.2 million allocated for the project, the two labs are receiving about \$2.2 million to develop a practical approach to reduce the size and cost of superconducting linear accelerators while simultaneously improving their reliability.

The team will leverage smaller, better-performing superconducting cavities based on an emerging technology known as thin-film Nb₃Sn (called "niobium-three-tin"). This film is only about 2 to 3 micrometers thick – about the size of a spiderweb strand. The team will produce these cavities in a process called vapor diffusion. Niobium-tin technology enables the elimination of the single point of failure associated with the cryogenic plant by replacing it with a distributed set of fault-tolerant cryocoolers.

These new niobium-three-tin cavities would require less helium for cooling and also replace today's larger, water heater-sized cavities with much smaller cavities about the size of a coffee can. The physical size reduction of the accelerator cryomodules would be a factor of three to five. Kelly said that a major part of what the R&D intends to address is to learn precisely what the size and cost reduction will be.

The ultimate goal for the researchers on the project is to demonstrate two high-performance niobium-three-tin-coated cavities optimized for protons moving near 50% the speed of light – a crucial step toward the full high-power accelerator. They also intend to develop an end-to-end linac design and conceptual layout optimized for niobium-three-tin.

While the Argonne team is focused primarily on the niobium-three-tin linac and cavity design and demonstration, Fermilab is providing its expertise and infrastructure to perform the vapor diffusion process that underpins the niobiumthree-tin technology.

Another project will receive \$7 million from the NEW-TON program for research that will complement the joint Argonne-Fermilab work. This project, titled, "Liquid Lead Suspended Fuel Subcritical Fission Blanket for Nuclear Waste Transmutation," focuses on a new type of transmutation process that uses a novel separation method to remove waste byproducts from the process. The method involves centrifugal force based on the recoil distance of fission products.

The project aims to transmute the entire US stockpile of minor actinides within 30 years, reducing the nuclear fuel mass by 28 times, which is roughly equivalent to shrinking a large swimming pool filled with spent fuel down to the size of a small hot tub. It will also decrease radiotoxicity management time 333-fold.

Team leader Taek K. Kim said, "I am very excited to receive funding from the NEWTON program to advance this brand-new technology. This method uses physics-based separation instead of conventional chemical separations such as PUREX, making it a separation technology that is more secure and more difficult to use for nefarious purposes."

The proposed transmutation system uses a proton accelerator to start fission in a liquid lead setup containing tiny minor actinide particles. As the minor actinide particles fission, the two new smaller nuclei are ejected from the particle and can be separated from the actinide particles by centrifugal methods in a recycling system.

More complete details may be found here: <u>https://www.anl.gov/article/argonne-and-fermilab-receive-</u>32m-in-federal-funding-for-nuclear-transmutation-technology

GAO – A new EM nuclear waste cleanup plan could save billions

The Government Accountability Office (GAO) released a report on May 29 titled, "Nuclear Waste: An Integrated Disposal Plan Could Help DOE Complete Its Cleanup Mission and Save Billions." The Office of Environmental Management (EM) is responsible for cleaning up and disposing of over 11 million cubic meters of nuclear waste from 15 federal sites, known as the EM complex. The remaining cleanup mission will take decades to complete at a cost of over \$400 billion, which is known as its environmental liability.

These sites have four types of nuclear waste – low-level radioactive waste (LLW), transuranic (TRU) waste, highlevel radioactive waste (HLW), and spent nuclear fuel from reactors at DOE sites and other sites as a result of atomic energy defense activities and research and development. EM develops estimates of the amount of each type of waste it expects to dispose of, but these estimates include significant uncertainties. For example, the waste amounts could vary depending on future cleanup approaches.

There are six DOE disposal facilities and two commercial disposal facilities for LLW, but GAO found that the disposal needs exceed the current capacity of these facilities so future expansion will be required. For TRU waste, EM has only one disposal option, which is the Waste Isolation Pilot Plant (WIPP) in New Mexico. Future TRU waste disposal needs could likely exceed WIPP's capacity. HLW and spent fuel have no existing disposal option and will require a deep geological repository.

Disposal options available to EM are often dictated by legal and regulatory requirements, the technical specifications of disposal facilities such as the capacity and types of waste they can accommodate, and government and stakeholder considerations such as regulatory approval. The use of different disposal options can increase or decrease the cost by billions of dollars.

GAO found that EM has not assessed opportunities to optimize complex-wide disposal decisions, and that EM could save billions of dollars by considering alternate disposal plans for certain waste. EM also has not developed an integrated waste disposal plan to address factors affecting EM's ability to complete its cleanup mission.

EM contends that they have not assessed complex-wide alternatives because of regulatory constraints; however, GAO states that the use of models could reduce the costs of the cleanup mission by billions of dollars. By developing a complex-wide plan, EM could better address interrelated issues across its 15 sites, and identify opportunities to address regulatory constraints.

The report may be found here: <u>https://www.gao.gov/prod-</u> ucts/gao-25-107109

NWTRB provides observations to DOE regarding its R&D disposal program

The Nuclear Waste Technical Review Board (Board) held its spring 2024 Board meeting on May 21-22, 2024 in Knoxville, Tennessee to review information on the Department of Energy's Office of Nuclear Energy's (DOE-NE) research and development activities related to the geologic disposal of spent fuel and high-level radioactive waste (HLW) in crystalline host rocks and on the corrosion of commercial spent fuel after disposal. On May 22, 2025, The Board issued a letter to Dr. Michael Goff, Acting Assistant Secretary for Nuclear Energy, that presented the Board's review and observations from the meeting.

The Board had observations and recommendations in several areas, briefly summarized below.

R&D activities related to nuclear waste disposal

While commending DOE for its leadership and participation in international collaborative research projects on the geological disposal of nuclear waste, the Board noted – as it has done before – that DOE can "gain valuable insights from international experience in nuclear waste disposal and leverage global expertise in program integration, siting, research strategy, and public engagement...Regardless of the chosen disposal strategy, DOE's program can benefit significantly from these international experiences." The Board also observed that DOE's focus on international collaborations "has been effective in advancing DOE's state of knowledge related to nuclear waste disposal," and the Board encouraged DOE to continue international collaborations and engagement with other countries that have made progress in repository design, construction, and operation.

Leveraging advances in geophysical characterization tools and techniques from other industries

Noting that DOE has supported collaborative programs in geophysical fracture characterization tools and techniques from other industries, the Board stated that the advances in the knowledge base in this area "can be used for site characterization of host rock and excavation damaged zone in geologic repositories," and thus encouraged DOE to build on past collaborations to leverage advances in geophysical characterization techniques and tools from other industries.

Commercial spent fuel corrosion after disposal

DOE's Fuel Matrix Degradation Model (FMDM) models the corrosion of commercial spent fuel under various repository conditions. The Board observed that the FMDM "comprehensively addresses electrochemical processes that may affect fuel matrix dissolution behavior in a deep geological repository." However, incorporating the FMDM into a numerical model, such as the Geologic Disposal Safety Assessment (GDSA), "faces multiple challenges and uncertainties, including developing data sufficient to support model implementation, verification, and validation." DOE is working to prioritize R&D to address these gaps, and the Board "continues to follow the DOE's efforts with interest." The Board recommended that DOE define "good enough" for the models in the FMDM "to avoid unnecessary effort for limited benefit."

Site tour at Oak Ridge National Laboratory (ORNL)

The Board toured the Molten Salt Reactor Experiment (MSRE) and High Flux Isotope Reactor facilities at ORNL the day before the meeting. The visit provided important insights needed to support the Board's ongoing evaluation of DOE's activities related to the management and disposal of spent fuel and HLW.

The full letter may be found here: <u>Board Letter to Dr. Mi-</u> <u>chael Goff (May 22, 2025)</u>

Constellation to submit LAR to accept new fuel for Crane Clean Energy Center

Representatives from Constellation Energy met with the Nuclear Regulatory Commission on June 2, 2025 to discuss a planned license amendment request (LAR) needed to support receipt of new fuel and startup source prior to approval of the Operating Reactor Licensing Bases (ORLB) for the Crane Clean Energy Center.

The LAR is required to modify the applicable License Condition and technical specifications to support receipt, possession, and storage of new reactor fuel and startup source. Approval is required before the receipt of new fuel in 2026. Constellation plans to submit the LAR by June 27, 2025, request approval by July 31, 2026, and implement the amendment by August 29, 2026.

Comments during the public portion of the meeting those who supported the restart and those opposed to it. One person asked if Constellation planned to use accident tolerant fuel. An NRC staff person said that based on what they know, the NRC does not anticipate the use of ATF fuel.

Three Mile Island Alert (TMIA), an organization that opposes the restart of Three Mile Island Unit 1 (Crane), filed a request with the NRC on May 27 asking the NRC to suspend any consideration of the planned LAR, asserting that the procurement of new fuel is "premature, and it would comprise an irreversible and irretrievable commitment of resources and would introduce bias in favor of approval of the contemplated restart of TMI-1 before the NRC Staff has complied with the *National Environmental Policy Act* (NEPA) obligation of environmental review and determination of whether an Environmental Impact Statement (EIS) is required for the proposed restart."

NAC International's OPTIMUS-L transport cask approved by the NRC

The Nuclear Regulatory Commission has approved NAC International's application for the OPTIMUS-L packaging system under 10 CFR Part 71 to transport high activity radioactive sources. The NRC issued Certificate of Compliance No. 9390 Revision 5 on April 30, 2025, which enables NAC to transport shielded sealed source devices used in a wide variety of applications.



The OPTIMUS-L system (shown above) is now licensed to carry a broader range of high-activity contents, including sealed sources such as Cesium-137 and Cobalt-60, widely used in medical, industrial, and research applications. In response to industry demand for a compact, lightweight, and modular Type B(U)F package, NAC enhanced the system's capabilities with a licensing approach that considers the shielding provided by sealed source devices themselves. This innovation enables OPTIMUS-L to safely transport high activity sources without requiring additional external shielding, making it ideal for use in constrained environments such as hospital loading docks, laboratories, and urban facilities without extensive overhead lifting infrastructure.

****Correction**: The source of the HABOG facility image shown in last week's issue of Spent*FUEL* is COVRA (the Central Organization for Radioactive Waste), not Orano. The image may be found here: <u>https://www.covra.nl/nl/organisatie/media/onthulling-aanbouw-habog-in-het-landelijkenieuws/</u>

SpentFUEL Subscription Details

SpentFUEL is published every Friday, 50 times a year, by UxC. The cost of a one-year subscription is US\$2,750.00. SpentFUEL presents information gathered through the activities of the publisher. Although great effort is dedicated to show accuracy, data are sometimes obtained from sources believed by UxC to be reasonably accurate; therefore, no warranties, express or implied are made, nor any liabilities assumed by UxC for the accuracy, effect or usefulness of any data contained in SpentFUEL.

UxC, LLC 1501 Macy Drive Roswell, GA 30076, USA Phone: +1 (770) 642-7745 Internet: https://www.uxc.com/ Carlyn Greene Managing Editor carlyn.greene@uxc.com

For subscription information, please contact Carlyn Greene at +1 (770) 833-6339. © 2025 UxC, LLC, All rights reserved. Unauthorized duplication is strictly prohibited.