LLW notes

Volume 33 Number 6 November/December 2018

Texas Low-Level Radioactive Waste Disposal Compact Commission

Texas Compact Facility Legislative Oversight Report Released

On December 1, 2018, the Joint Compact Facility Legislative Oversight Committee (Joint Committee) submitted its report on the Texas Low-Level Radioactive Waste Disposal Compact (Texas Compact) facility to the Senate Committee on Natural Resources and Economic Development and the House Committee on Environmental Regulation.

The Joint Committee was established pursuant to House Bill (HB) 2662, which was passed by the 85th Legislature during the regular session. The Joint Committee heard invited and public testimony during a scheduled hearing on September 6, 2018.

The following overview includes detailed excerpts from the Joint Committee's report. Interested stakeholders seeking additional information should review the report in its entirety.

Charge

Since opening in 2012, Waste Control Specialists (WCS) has operated at a loss. According to the Joint Committee's report, "there is continued concern that the current regulatory scheme, including fee allocation, is prohibitively cumbersome and that it may prevent any owner of the Facility from operating at a profit."

The following is the charge for the Joint Committee pursuant to HB 2662:

> *Assessment of the Texas Low-Level Radioactive Waste Disposal Compact facility to include recommendations relating to costs, fees, and any other matters the legislative oversight committee determines are relevant to the compact facility and oversight of the compact facility. Report must include the results of the assessment.*

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As part of that mission, the LLW Forum publishes a newsletter, news flashes, and other publications on topics of interest and pertinent developments and activities in the states and compacts, federal agencies, the courts and waste management companies. These publications are available to members and to those who pay a subscription fee.

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Low-Level Radioactive Waste Forum, Inc.

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Directors that serve on the Board of the Low-Level Radioactive Waste Forum, Inc. are appointed by governors and compact commissions. The LLW Forum, Inc. was established to facilitate state and compact implementation of the Low-Level Radioactive Waste Policy Amendments Act of 1985 and to promote the objectives of low-level radioactive waste regional compacts. The LLW Forum, Inc. provides an opportunity for state and compact officials to share information with each another and to exchange views with officials of federal agencies and other interested parties.

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Key to Abbreviations

U.S. Department of Energy ..... DOE
U.S. Department of Transportation ..... DOT
U.S. Environmental Protection Agency ..... EPA
U.S. Government Accountability Office ..... GAO
U.S. Nuclear Regulatory Commission ..... NRC
Naturally-occurring and accelerator-produced radioactive material ..... NARM
Naturally-occurring radioactive material ..... NORM
Code of Federal Regulations ..... CFR

Low-Level Radioactive Waste Forum, Inc. (LLW Forum)

Registration Open for Spring 2019 LLW Forum Meeting

Hilton Old Town Hotel in Alexandria, Virginia
April 17-18, 2019

The Low-Level Radioactive Waste Forum (LLW Forum) is pleased to announce that registration is now open for our spring 2019 meeting, which will be held at the Old Town Hotel in Alexandria, Virginia on April 17-18, 2019. This will be a one and one-half day meeting beginning at 9:00 a.m. on Wednesday and concluding at 1:00 p.m. on Thursday. Please mark your calendars accordingly and save the date!

The Executive Committee will meet from 7:30 – 9:00 a.m. on Wednesday morning (April 17). The Disused Sources Working Group (DSWG) will meet on Thursday afternoon and Friday morning (April 18-19).

Interested stakeholders are encouraged to register and make hotel reservations for the meeting at your earliest convenience, as there is limited space available in our discount room block.

The meeting documents — including a meeting bulletin and registration form — are attached and have also been posted to the LLW Forum Meeting page of the organization's web site at http:// llwforum.org/llw-forum-meeting/.

As a new option for interested stakeholders, a registration form may be completed and submitted online.

Attendance

Officials from states, compacts, federal agencies, nuclear utilities, disposal operators, brokers/ processors, industry and other interested parties are encouraged to attend the spring 2019 LLW Forum meeting.

LLW Forum meetings are an excellent opportunity to stay up-to-date on the most recent and significant developments in the area of low-level radioactive waste management and disposal. They also offer an important opportunity to network with other government and industry officials and to participate in decision-making on future actions and endeavors affecting low-level radioactive waste management and disposal.

LLW Forum Meeting Location and Dates

The spring 2019 LLW Forum meeting will be held on Wednesday, April 17 (9:00 a.m. – 5:00 p.m.) and Thursday, April 18 (9:00 a.m. – 1:00 p.m.) at:

Hilton Old Town Hotel
1767 King Street
Alexandria, Virginia

Located in the historic, vibrant King Street neighborhood, the Hilton Old Town Hotel is one of the most convenient hotels in Alexandria, Virginia for business and leisure travelers visiting the Washington, DC metropolitan area. The hotel is just steps away from the King Street metro station and close to Reagan National Airport. Downtown DC attractions and government buildings are minutes away by metro.

Registration

All persons must pre-register for the LLW Forum meeting and pay any associated registration fees in order to be allowed entry. Registration forms are needed in order to ensure that you receive a meeting packet and name badge. Accordingly, interested attendees are asked to please take a

moment to complete the meeting registration form at your earliest convenience and return it to the LLW Forum at the mailing or e-mail address listed at the bottom of the form.

The meeting is free for up to two individuals representing members of the LLW Forum. Additional and non-member registration is $600, payable by check only to the "LLW Forum, Inc." (Credit card payments are not accepted.)

Reservations

Persons who plan to attend the meeting are strongly encouraged to make their hotel reservations and send in their registration forms as soon as possible, as we have exceeded our block at the last few meetings.

A dedicated block of hotel rooms has been reserved for Tuesday (April 16) through Thursday (April 18) for meeting attendees at the special, discounted rate of $251.00 (single rate) plus tax per night. The same rate has been extended to three days prior to and three days post the meeting dates, subject to availability.

To make a reservation, please go to http://www.hilton.com/en/hi/groups/personalized/D/DCAOTHF-AWE-20190416/index.jhtml — this booking link can also be found on the attached meeting bulletin — or call (703) 647-2014 and request a room using Group Discount Rate Code AWE. *Please note that you must provide the code in order to get the special, discounted rate.*

The deadline for reserving a room at the discounted rate is March 16, 2019.

Transportation and Directions

From Reagan National Airport via the metro, the hotel is located next to the King Street Metro Station, accessible by the Blue and Yellow lines and only two stops from Reagan National Airport. Directions from other metro area airports can be found on the Hilton website at https://www3.hilton.com/en/hotels/virginia/hilton-alexandria-old-town-DCAOTHF/index.html. Taxi fares are typically around $20.00 each way.

If you have questions or require additional information, please contact Todd D. Lovinger, Esq. — Executive Director of the LLW Forum and Project Director of the Disused Sources and Part 61 Working Groups (DSWG/P61WG) — at (754) 779-7551 or at LLWForumInc@aol.com.

Atlantic Compact/State of South Carolina

Environmental Groups File Challenge to SCANA Buyout

On December 24, 2018, two environmental groups filed a protest with the South Carolina Public Service Commission (PSC) to challenge the regulators' decision to approve the acquisition of utility SCANA Corporation by Dominion Energy, Inc. in an all-stock deal worth about $14.6 billion, including debt.

The South Carolina PSC recently approved the deal after a hearing on December 14, 2018. (See LLW Forum News Flash titled, "South Carolina Regulators Approve Dominion's Buyout of SCANA," December 18, 2018.) Environmental groups that temporarily shut down the PSC hearing protested the deal, which will affect hundreds of thousands of South Carolina power customers.

News of the merger followed a July 2017 announcement that South Carolina Electric & Gas Company SCE&G would cease construction of two new nuclear reactors at the V.C. Summer Nuclear Station in Jenkinsville, South Carolina. (See *LLW Notes*, July/August 2017, pp. 7-8.) SCE&G, which is a principal subsidiary of SCANA, filed a petition with the PSC seeking approval of its abandonment plan after announcement of the merger. (See *LLW Notes*, January/February 2018, pp. 6-9.)

SCE&G decided to abandon the V.C. Summer project after considering the additional costs to complete the new nuclear reactors, the uncertainty regarding the availability of production tax credits for the project and the amount of anticipated guaranty settlement payments from Toshiba Corporation (Toshiba). SCE&G's decision was also influenced by other matters associated with continuing construction including the decision of the co-owner of the project, the South Carolina Public Service Authority (Santee Cooper), the state owned electric utility, to suspend construction of the project. Based on these factors, SCE&G concluded that it would not be in the best interest of its customers and other stakeholders to continue construction of the project.

In November 2017, SCE&G said that it would cut electricity rates in response to concerns from customers who bore costs tied to the abandoned nuclear project. Dominion will also write off more than $1.7 billion of existing capital and regulatory assets related to the abandoned nuclear plants, the company said.

Legal Challenge

The legal challenge began when a pair of environmental groups – Friends of the Earth and the Sierra Club – filed protests with the PSC, which made the original decision to approve the acquisition. The same groups have been making waves throughout the decades long nuclear project.

Due to the legal challenge, PSC regulators will have to formally reconsider their decision. Although regulators are unlikely to overturn their own decision, the move could potentially set the stage for an appeal to the state Supreme Court.

The environmental groups argue that the PSC should have made an official determination as to whether or not SCE&G handled the nuclear project appropriately. In particular, they assert that SCE&G failed to tell regulators about studies that questioned the project's viability. They claim that "SCE&G fraudulently lied, misled and withheld material information" about problems that doomed the $9 billion plan to build a pair of reactors at V.C. Summer Nuclear Station, which is located north of Columbia, South Carolina.

Overview

Dominion's offer includes a rate cut of up to $22 per month for SCE&G customers. However, it also ensures those 730,000 customers will pay another $2.3 billion — or $1,600 for the average household over the next 20 years — for the SCE&G V.C. Summer nuclear construction project that has been terminated.

Unless a formal appeal proceeds, the PSC decision would settle a legal and political firestorm that has continued for almost 17-months following a July 2017 announcement that SCE&G and state-owned Santee Cooper were terminating a decade-long, $9 billion project to build two nuclear reactors in Fairfield County. The project led to nine rate hikes, through which SCE&G customers paid approximately $2 billion for the proposed new reactors. Approximately 18 percent of monthly bills — i.e., $27 a month for the average residential customer — went toward the project.

In approving the buyout, the PSC required that Dominion give one of its board seats to a current SCANA board member, that the headquarters for SCE&G remain in Cayce and that the salaries of SCANA's current employees be protected at least through July 1, 2020.

"Dominion Energy is encouraged by the Commission's vote and awaits an order to review prior to making a final decision to close the merger with SCANA," said Dominion Chief Executive Tom Farrell in a statement. SCANA Chief Executive Officer (CEO) Jimmy Addison said the company is pleased to be "one step closer to a final resolution and the certainty that stakeholders have been hoping for." South Carolina Governor Henry McMaster (R-Richland) and House Speaker Jay Lucas (R-Darlington) also issued statements supporting the PSC's decision.

The PSC's approval was the last hurdle that Dominion needed to clear in order to close the deal. According to news reports, the PSC was widely expected to approve the deal after South Carolina Attorney General Alan Wilson (R-Lexington) and Speaker Lucas publicly endorsed Dominion's offer. Attorneys suing SCANA on behalf of SCE&G ratepayers also agreed to settle their lawsuits if the Dominion deal closes.

In approving the Dominion deal, the PSC rejected several suggested conditions requested by the South Carolina Office of Regulatory Staff (ORS). Among them was a suggestion that the PSC require the debt to be repaid through securitization, a mechanism that would lower SCE&G customers' rates but also reduce the utility's profits as it pays off that debt. Dominion has said it would withdraw its offer for SCANA if the PSC ordered the debt be securitized.

Background

Following the bankruptcy filing of Westinghouse Electric Company, LLC (WEC), SCE&G and Santee Cooper each began a comprehensive process of evaluating the most prudent path forward for the new V.C. Summer nuclear reactors. The project owners worked with WEC and Fluor Corporation, as well as other technical and industry experts, to evaluate the project costs and schedules.

Based on this evaluation and analysis, SCE&G concluded that completion of both new nuclear reactors would be prohibitively expensive. According to SCE&G's analysis, the additional cost to complete both reactors beyond the amounts payable in connection with the engineering, procurement, and construction contract would materially exceed prior WEC estimates, as well as the anticipated guaranty settlement payments from Toshiba. Moreover, in order to qualify for production tax credits under current tax rules, the new reactors would need to be online before January 1, 2021. SCE&G's analysis concluded that the new reactors could not be brought online until after this date.

SCE&G also considered the feasibility of completing the construction of Unit 2 and abandoning Unit 3 under the existing ownership structure and using natural gas generation to fulfill any remaining generation needs. This option provided a potentially achievable path forward that may have delivered SCE&G a similar megawatt capacity as its 55% interest in the two reactors and provided a long-term hedge against carbon legislation/regulation and against gas price volatility. SCE&G had not reached a final decision regarding this alternative when Santee Cooper determined that it would be unwilling to proceed with continued construction. Consequently, SCE&G determined that it is not in the best interest of customers and other stakeholders for it to continue construction of one reactor.

Based on the evaluation and analysis, and Santee Cooper's decision, SCE&G has concluded that the only remaining prudent course of action would be to abandon the construction of both Unit 2 and Unit 3 under the terms of the Base Load Review Act (BLRA). Accordingly, normal construction activities at the site were immediately ceased and efforts were shifted toward an orderly transition of winding down and securing the project property. SCE&G planned to use the anticipated payments resulting from the settlement of Toshiba's guaranty to mitigate cost impacts to SCE&G electric customers.

Dominion Energy is one of the largest energy utility companies in the United States, with 16,200 employees and operations in 18 states. It delivers electricity and natural gas to nearly 5 million homes and businesses, and its operations include 25,600 megawatts of electric generating capacity; 66,300 miles of natural gas gathering, transmission, distribution and storage pipelines; 64,200 miles of electric transmission and distribution lines; and, one of the nation's largest natural gas storage systems.

SCANA Corporation — which is headquartered in Cayce, South Carolina — is an energy-based holding company principally engaged, through subsidiaries, in electric and natural gas utility operations and other energy-related businesses.

For additional information, please contact Ryan Frazier of Dominion at (804) 819-2521 or at C.Ryan.Frazier@dominionenergy.com or Grant Neely of Dominion at (804) 771-4370 or at Grant.Neely@dominionenergy.com or go to www.dominionenergy.com or www.scana.com.

Commonwealth of Massachusetts

Holtec Requests NRC Approve Sale of Pilgrim Site by End of 2019

Seeks to Complete Decommissioning Decades Earlier

On November 16, 2018, Entergy Corporation and Holtec International, through their affiliates, asked the U.S. Nuclear Regulatory Commission (NRC) to approve the sale of the Pilgrim Nuclear Power Station to Holtec after shutdown. According to the associated press release, doing so would allow Holtec to complete decommissioning and site restoration decades sooner than if Entergy completed decommissioning.

Overview

The companies jointly filed a License Transfer Application, requesting approval for the transfer of the Pilgrim Nuclear Power Station, as well as its Nuclear Decommissioning Trust Fund, to Holtec after the plant permanently shuts down by June 1, 2019. They also made detailed separate filings that lay out the process each company would use to decommission the facility.

In order to facilitate a timely transaction closing by the end of 2019, the companies have asked the NRC to approve the application by May 31, 2019. According to the press release, doing so will benefit the community, employees and other interested constituents.

Holtec's filings describe the plan of its subsidiary, Holtec Decommissioning International, to complete the dismantling, decontamination and remediation of Pilgrim to NRC standards within eight years of license transfer (i.e., by the end of 2027) assuming timely regulatory approvals. According to the press release, Holtec's process will achieve site restoration decades sooner than if Entergy retained the plant while meeting all applicable local, state and federal regulations.

Holtec estimates total costs for decommissioning Pilgrim at $1.13 billion. As of October 31, 2018, the balance in Pilgrim's Decommissioning Trust Fund was $1.05 billion.

"Holtec's technical expertise, innovations and industry-leading experience in spent fuel management and decommissioning enable it to do the work in a more cost-effective manner, with uncompromised safety and under rigorous NRC oversight," states the press release. "Over 100 nuclear plants rely on Holtec's nuclear fuel storage technology, and the company is the world leader in spent nuclear fuel storage technology design and implementation."

Holtec has contracted with Comprehensive Decommissioning International, LLC (CDI) to perform the decommissioning, including demolition and site cleanup. CDI is a joint venture company of Holtec International and SNC-Lavalin. According to the press release, "The decommissioning experience held by Holtec and SNC-Lavalin gives CDI more than half a century of managing complex projects in both the commercial and government nuclear sectors worldwide."

Project Highlights

The completion of decommissioning will result in the release of all portions of the site from the current NRC license, with the exception of the Independent Spent Fuel Storage Installation (ISFSI) – the area where spent nuclear fuel is stored in dry casks until the U.S. Department of Energy (DOE) transfers the spent fuel offsite.

As part of its plan, Holtec expects to move all spent nuclear fuel into dry casks within three years following plant shutdown. Additionally, Holtec has a pending application with the NRC for a Consolidated Interim Storage Facility (CISF) in New Mexico, which could eventually store spent nuclear fuel from Pilgrim and other U.S. nuclear power plants. (See *LLW Notes*, July/August 2018, pp. 16-18.)

In addition to the License Transfer Application, Entergy and Holtec submitted filings with the NRC that outline the following areas:

- Post-Shutdown Decommissioning Activities Report: A description, schedule and cost estimate of planned decommissioning activities.

- Decommissioning Cost Estimate: A study estimating the costs to decommission the nuclear plant — including labor, fuel and disposal fees (included as an attachment to the PSDAR).

- Commingled Fund Exemption Request: A request to allow the Nuclear Decommissioning Trust Fund to be used for spent fuel management and site restoration (Holtec's exemption request is included with the License Transfer Application).

- Updated Spent Fuel Management Plan: Entergy also submitted an Updated Spent Fuel Management Plan, which describes how Pilgrim intends to fund and manage all spent

nuclear fuel until it is transferred to the DOE for ultimate disposal.

The Entergy submittals will govern Pilgrim's decommissioning if Entergy remains the plant owner and operator. If the sale, which was originally announced on August 1, 2018, does not take place and the Entergy affiliate (Entergy Nuclear Generation Company) continues to own Pilgrim, then the plant would be placed in "SAFSTOR." (See *LLW Notes*, July/August 2018, pp. 19-21.)

SAFTSTOR is an NRC-approved option that allows the Nuclear Decommissioning Trust Fund to grow over several decades before decommissioning and site restoration is completed by 2080. Entergy estimates total costs for decommissioning Pilgrim using the SAFSTOR method to be $1.66 billion. The Holtec submittals provide its plan for decommissioning the plant promptly.

Background

The Pilgrim Nuclear Power Station employs about 600 nuclear professionals and generates 680 megawatts of virtually carbon-free electricity, enough to power more than 600,000 homes. Pilgrim began generating electricity in 1972. Entergy purchased the plant in 1999 from Boston Edison.

Entergy Corporation is an integrated energy company engaged primarily in electric power production and retail distribution operations. Entergy owns and operates power plants with approximately 30,000 megawatts of electric generating capacity, including nearly 9,000 megawatts of nuclear power. Entergy delivers electricity to 2.9 million utility customers in Arkansas, Louisiana, Mississippi and Texas. Entergy has annual revenues of approximately $11 billion and more than 13,000 employees.

Holtec International is a privately held energy technology company with operation centers in Florida, New Jersey, Ohio and Pennsylvania in the United States. Globally, Holtec International has operation centers in Brazil, Dubai, India, South Africa, Spain, the United Kingdom and Ukraine. Holtec's principal business concentration is in the nuclear power industry. Since the 1980s, Holtec has been densifying wet storage in nuclear plants' spent fuel pools, which defers the need for and expense of alternative measures by as much as two decades. Holtec has done this at over 110 reactor units in the United States and abroad. Holtec also offers services regarding dry storage and transport of nuclear fuel. Holtec is working to develop the world's first below-ground CISF in New Mexico and a 160-Megawatt *walk away safe* small modular reactor, SMR-160. The SMR-160 is developed to bring cost competitive carbon-free energy to all corners of the earth including water-challenged regions. Holtec is also a major supplier of special-purpose pressure vessels and critical-service heat exchange equipment such as air-cooled condensers, steam generators, feedwater heaters and water-cooled condensers. Virtually all products produced by Holtec are built in its three large manufacturing plants in the United States and one in India.

For additional information about the Pilgrim plant, please go to www.pilgrimpower.com. Additional information about Entergy is available at www.entergy.com. To learn more about Holtec International, please visit www.holtecinternational.com.

Northwest Compact/State of Utah

Utah Waste Management and Radiation Control Board Meets

On November 8, 2018, the Utah Waste Management and Radiation Control Board held an electronic meeting beginning at 1:30 p.m. MT in Salt Lake City, Utah.

The meeting, which was open to the public, was held in Conference Room 1015, Department of Environmental Quality (DEQ) Board Room, in the Multi Agency State Office Building that is located at 195 North 1950 West in Salt Lake City, Utah.

Agenda

The following items, among others, were on the agenda for the November 8, 2018 Board meeting:

I. Call to Order

II. Public Comment

III. Declarations of Conflict of Interest

IV. Approval of Meeting Minutes for the October 11, 2018 Board Meeting *(Board Action Item)*

V. Approval of Meeting Minutes for the October 25, 2018 Board Meeting *(Board Action Item)*

VI. Underground Storage Tanks Update

VII. Administrative Rules

A. Approval of final adoption of proposed changes to Solid Waste Rules R315-301, to add a new subsection (R315-301-7) to establish self-inspection requirements in accordance with Section 19-6-109 of the Solid and Hazardous Waste Act *(Board Action Item)*

VIII. Other Business

A. Miscellaneous Information Items

B. Scheduling of Next Board Meeting

XI. Adjourn

Background

The Board—which is appointed by the Utah Governor with the consent of the Utah Senate—guides development of Radiation Control policy and rules in the state.

The Board holds open meetings ten times per year at locations throughout the state. A public comment session is held at the end of each meeting.

Copies of the Utah Waste Management and Radiation Control Board meeting agendas and packet information can be found at http://www.deq.utah.gov/boards/utah-waste-management-radiation-control-board-meetings.htm.

For additional information, please contact Rusty Lundberg, Deputy Director of the Division of Waste Management and Radiation Control at the Utah Department of Environmental Quality, at (801) 536-4257 or at rlundberg@utah.gov.

Southwestern Compact

Southwestern Compact Commission Hosts 80th Meeting

On November 14, 2018, the Southwestern Low-Level Radioactive Waste Commission hosted its 80th meeting via teleconference beginning at 1:00 p.m. PDT.

The following topics, among others, were on the meeting agenda:

- call to order;
- roll call;
- welcome and introductions;
- statement regarding due notice of meeting;
- election of Officers for Year 2019;
- public comment;
- future agenda items;
- next meeting — under review; and,
- adjournment.

Members of the public were invited to attend the meeting and comment on specific agenda items as the Commission considered them. The total public comment time on each agenda item was limited to 15 minutes. Written material was also accepted. A 15-minute public comment period was provided near the end of the meeting at which time members of the public were invited to bring before the Commission issues relating to low-level radioactive waste but which were not on the agenda.

For additional information, please contact Kathy Davis, Executive Director of the Southwestern Compact Commission, at (916) 448-2390 or at swllrwcc@swllrwcc.org.

(Continued from page 1)

Waste Disposal Rates for In-Compact Generators

Background In-compact generators of low-level radioactive waste are statutorily mandated to pay a rate to the Compact Waste Facility (CWF) operator when disposing of waste at the facility. Section 401.245 of the Texas Health and Safety Code charges the Texas Commission on Environmental Quality (TCEQ) with establishing, by rule, a party state disposal rate. TCEQ must base this rate on various criteria including projected annual volume of waste to be disposed; the relative hazard of the waste; costs necessary for the operation and maintenance of the facility; providing that the operator is able to receive a reasonable profit; costs for future decommissioning, closing, and other post-closing activities; providing funding for local public projects; providing a reasonable rate of return on capital investments by the operator; providing a sufficient amount to pay for mandated rates; costs associated with providing security at the facility; and, providing support for Texas Low-Level Radioactive Waste Disposal Compact Commission (Texas Compact Commission). In developing these rates, the legislature directed that, "to the extent practicable, [TCEQ] shall use the methods used by the Public Utility Commission of Texas's (PUCT) methods for ratemaking when establishing overall revenues, reasonable return, and invested capital."

TCEQ Rate Setting The rate established by TCEQ serves as the maximum rate which in-compact generators can be charged and the

minimum rate that out-of-compact generators can be charged to dispose of waste at the CWF. This currently serves the purpose of guaranteeing that in-compact generators will never pay more than out-of-compact state generators, but does not establish specific prices for disposal. The operator, WCS, still negotiates disposal prices via contract with both in-compact and out-of-compact generators in accordance with this current statutory requirement to ensure that in-compact generators receive a lower price than out-of-compact generators. However, since the private operator and party state generators negotiated a rate, TCEQ has not conducted a rate case to calculate an appropriate rate.

Market Conditions and the Public Utility Rate Model Unlike most industries regulated by the PUCT, WCS is a for-profit business that participates in a competitive market place. The in-compact generators have alternatives to disposing of waste at the CWF and consistently exercise that option due to market conditions. The most frequently utilized alternative is the Energy*Solutions* facility in Clive, Utah that can only accept Class A waste. Additionally, generators of low-level waste are fundamentally different from a typical regulated utilities' captive customer base due to the alternative disposal and storage options available to generators. This makes it difficult, if not impossible, to create waste stream projections that are paramount in developing a rate structure that meets the specified criteria. This inability to predict a rate of disposal is an obstacle to calculating an appropriate rate to cover costs and provide a reasonable profit to the operator or meet the other statutory requirements. If a model reflecting conservative waste stream projections is utilized, it results in a higher rate that would likely result in the generators exercising alternative options to disposal at the CWF.

Stakeholder Testimony WCS has requested that the rates of non-party state generators be untethered from the current rate rule so that they can freely negotiate prices as the market dictates. WCS is not seeking to remove the rate ceiling for in-compact generators, which would serve to ensure that in-compact generators continue to receive a rate lower than out-of-compact generators. One scenario in which WCS could potentially consider offering a lower rate to out-of-compact generators might be a bulk disposal discount if an out-of-compact generator were to contractually commit to disposal of a certain amount of waste. WCS also told the Joint Committee that the flexibility to negotiate with out-of-compact generators is necessary to offset and subsidize the lower in-compact rates. It was noted that in-compact waste has accounted for 20% of waste disposed at the CWF since it's opening, but has only accounted for 5% of CWF revenue over the same time period. WCS testified that in-compact generators pay, on average, four times less than non-compact generators. WCS also explained that because the rate is established by TCEQ rule, there is a nine to twelve month period in which changes to the rule are considered before the rule is finally adopted including an opportunity for public comment on any proposal. This allows ample time for WCS's competitors to adjust their rate structures prior to WCS's implementation of any newly adopted TCEQ rate. The process of TCEQ establishing the rate by rule effectively gives WCS's competitors time to preemptively undercut WCS' pricing while WCS must wait the better part of a year to respond to changes in the market rates. WCS emphasized that their intention is not to raise rates for party state generators as shown by their commitment to retain the TCEQ rate as a maximum price for in-compact generators. Advocates for Responsible Disposal in Texas (ARDT), representing the in-compact generators, testified that they would like any changes to the rate structure to continue to guarantee in-compact generators a rate lower than out-of-compact generators. One justification for this request was due to their investment and efforts to develop a CWF.

Joint Committee Recommendations The Joint Committee recognized the intent of the rate rule, while acknowledging that current compliance

regulations pose a risk to the financial viability of a private operator. The Joint Committee expressed a desire to retain the spirit of the rate rule by providing low prices to in-compact generators, but recognized that the contract review process has proven to be an impediment to WCS's desire to participate in the free market for out-of-compact waste. In the Committee's discussion of the rate rule and pricing issue, a number of possible solutions were developed to the issues posed by the rate rule. The proposals included accepting WCS' request to untether non-compact waste from the rate rule; creating a floating rate that is more adaptable to market conditions; and, developing quicker mechanisms to ensure compliance.

Contract Review

Background WCS testified that their concern with the rate rule is the current method by which compliance is verified by TCEQ. Currently, TCEQ reviews each individual contract prior to shipment in order to verify that party state generators are being charged less than the rate rule and that non-party generators are charged more. TCEQ is also statutorily required to confirm that all contracts are negotiated in good faith, in compliance with antitrust law and nondiscriminatory. In addition, TCEQ is required to review WCS contracts with in-compact generators within 30 days, but no time limitation exists for the review of the contracts WCS enters into with out-of-compact generators. On average, TCEQ's review of the contracts for in-compact generators is completed in 28.7 days from the initial submittal. For out-of-compact generators, TCEQ completes the review in 140.2 days on average. However, the range for which out-of-compact contracts are completed varies widely from 1-791 days. TCEQ does work with WCS to prioritize the review of contracts that are most important to WCS. The contract review process is complicated for a number of reasons that may be the basis for such a varying and lengthy review process. First, there is no standard industry contract and developing a boilerplate contract is impractical due to the nature of the complex factors that must be taken into account such as waste classification, radioactivity, make up of waste, dose rates and relative hazard. Further, reviewing contracts for nondiscriminatory practices and compliance with antitrust laws is ambiguous and relies on an assumption that a comparison between customers can be readily made. In reality, every customer and shipment is unique, so a true comparison is extremely difficult. Additionally, since the contract review process is prospective, in actuality only hypothetical or assumed shipment factors can be utilized. Often the characteristics of actual waste shipments differ from contract details due to waste decays, volume reductions, various market factors and business decisions. TCEQ has recently streamlined the contract review process to more efficiently satisfy their statutory requirements. The new process requires WCS to submit each contract to TCEQ with information that demonstrates it satisfies the statutory requirements. After the submission of the contracts to TCEQ, the contract may go into effect and WCS may accept and dispose of the waste. To ensure compliance, WCS is now required to "provide quarterly reports with mathematical demonstrations showing that the contract prices comply with the statutory requirements for all shipments actually received for disposal during that period." This allows for actual shipments rather than assumed shipments to be reviewed by TCEQ. For this new contract review process to be practically implemented, WCS will be required to include claw-back provisions in their contracts. If a shipment is found to be out of compliance, WCS can then retroactively address any non-compliance and take actions to make the necessary restitution. For example, if it were found that a non-party generator received a rate lower than the rate rule, WCS would go back to the customer to remedy that error. TCEQ does not currently dictate the terms of any claw-back provisions and allows WCS to draft these provisions, but WCS must certify to TCEQ that each contract contains a provision that provides for this sort of

retrospective action. If TCEQ finds that a contract is not in compliance, TCEQ would reject the contract until it is brought into compliance.

Stakeholder Input WCS has requested that out-of-compact contracts be released from the rate rule. Doing so would eliminate the need for a contract review process for out-of-compact contracts. The contract review process would continue for in-compact contracts to ensure they are receiving a rate below the rate rule. As TCEQ has noted, party state contracts are reviewed and approved in a timely manner and are not at issue. ARDT told the Committee that it generally opposes this proposal due to their opposition to untethering non-party state rates to the rate rule. ARDT has suggested an alternative form to ensure compliance, which was not detailed at the interim hearing. One recommendation made was to allow the party-state generators to annually audit WCS, which may present concerns regarding conflicts-of-interest and proprietary business information protections.

Joint Committee Recommendations The Joint Committee expressed concerns with allowing private companies to audit another private company with whom they are actively negotiating contracts due to the inequitable negotiating position in which WCS would be placed. The Joint Committee further expressed concerns with adopting an alternative compliance mechanism without specificity in how it would be implemented. Absent a sufficient regulatory framework, if in-compact generators and WCS ever disagreed on compliance with a contract, a potential for routine litigation may be created. The Joint Committee recognized that untethering the out-of-compact rates would eliminate the need for a cumbersome contract review process. The Joint Committee also discussed statutory changes that would allow TCEQ to review an aggregation of contracts rather than reviewing them on an individual basis. Practically speaking, TCEQ would review both in-compact and out-of-compact contracts over a certain period of time and compare the average rates for each to verify compliance.

Fees and Surcharges

Background There are four statutorily required surcharges imposed on out-of-compact waste that amount to 31.25% of the contract price. Three of the surcharges are imposed on in-compact waste that amount to 11.25% of the contract price. These fees were reduced through August 2019 to 16.25% and 6.25% respectively. Additionally, there is a $10/cubic foot fee assessed on both in-compact and non-compact waste. The Joint Committee report details fees assessed and where they are directed, as well as the amounts collected on an annual basis for each surcharge since the CWF began accepting waste for disposal in 2012.

Stakeholder Input WCS noted that the surcharges are excessive when compared to those imposed on their competitors, which range from 5% - 12%. In order to offer competitive pricing, WCS told the Joint Committee that it must further reduce their prices to offset the additional cost of the surcharges to their customers. WCS has requested that fees and surcharges be permanently reduced to align with the market rate of surcharges their competitors are required to assess. ARDT has stated that they do not oppose a reduction in surcharges or fees, but has not further defined their position.

Joint Committee Recommendations The Joint Committee discussed the amount and purpose of the fees and surcharges assessed on both in-compact and out-of-compact waste. The Joint Committee recognized that the default surcharge levels of 36.25% and 16.25% are excessive, especially in light of WCS's competitor's surcharges, and found that a reduction in fees may be reasonable. The Joint Committee further recognized that reducing the surcharges would result in an increase in both in-compact and out-of-compact waste because WCS would be able to offer more competitive rates. The Joint Committee considered that despite reducing the surcharges, the state might actually receive a

greater financial benefit due to the increased volume of waste disposed that would be incentivized by lower surcharges.

Waste Disposal Capacity

Background WCS is permitted through TCEQ to dispose up to 9 million cubic feet and 3.89 million curies (decay corrected). Since opening in 2012, WCS has disposed of approximately 120,000 cubic feet. Compact waste accounts for 24,538 cubic feet and the remainder is attributable to imported waste. Currently, WCS has a built-out capacity of 475,000 cubic feet. Much like a landfill, the CWF is constructed in phases, as additional capacity is needed, as it would be economically impractical and environmentally irresponsible to build out the entire permitted capacity at once. The next disposal cell is planned to have a capacity of 425,000 cubic feet. It will cost approximately $10.6 million and take 9-12 months to complete construction. The amount of imports WCS may accept is statutorily limited in two ways. First, the operator can dispose up to 30% of the *initial* licensed capacity (in both cubic feet and curies) of imported waste. Second, the operator can dispose of no more than 275,000 curies/year of out-of-compact waste. The initial license permitted disposal of 2.32 million cubic feet and 1.167 million curies. This translates to 7.7% of currently licensed cubic feet and 15% of currently licensed curies. Based on data provided by in-compact generators, TCEQ projections show that the in-compact generator's capacity needs amount to 1,036,000 cubic feet. By subtracting TCEQ's projection for in-compact generators and the statutory limit on out-of-compact waste from the current licensed volume of 9 million cubic feet, WCS is left with 7,271,000 cubic feet or 81% of permitted capacity that will go unused under the current statutory limitations for out-of-compact waste.

Stakeholder Input WCS has requested several statutory changes to allow for increased imports. WCS testified that the statutory limit on out-of-compact waste constrains their ability to bid on larger and more lucrative contracts that help to offset and subsidize the party state generators lower rates. To date, WCS has not reached that annual limit. However, there are potential large-scale disposals that could exceed the current annual limit on out-of-compact waste in a single year or, in the alternative, make it impossible to accept both smaller imports and a single large import. First, WCS has requested that the waste receipt limitation of 30% of initial licensed capacity for out-of-compact waste be removed from statute. Instead, WCS would like TCEQ to set specific limits on out-of-compact waste based on their capacity reports. This will allow TCEQ to adjust the in-compact set-aside more easily, while also allowing WCS to fully utilize their total licensed capacity. Second, WCS would like to eliminate the 275,000-curie per year limit on out-of-compact waste acceptance. WCS testified that this restriction is unnecessary to preserve capacity for in-compact waste since there are currently other regulations that serve that purpose. ARDT has proposed alternative measures that could satisfy both parties' objectives, which are to allow for increased imports while preserving as-built capacity for in-compact generators. The proposal would create triggering mechanisms that would require WCS to either complete an additional disposal cell or cease accepting imports. Under ARDT's proposal, operational waste would be distinguished from decommissioning waste. Most waste currently received at the CWF is considered operational waste. Operational waste is a byproduct of the normal operations of a power plant, a hospital or a research institution and includes gloves, concrete and other smaller items that are exposed to low doses of radiation. When a nuclear plant is decommissioned, there are large-scale items (i.e., machinery) that must be disposed. This large-scale waste resulting from the closure of a nuclear plant is termed decommissioning waste. ARDT told the Joint Committee that it would like to see three years of operational waste be available at all times, based on the average amount of waste disposed over the preceding five years. If WCS were to fail to meet this

requirement, the in-compact generators would halt all imports until the next disposal cell is complete or until WCS has executed a performance bond that could be used to construct another disposal cell. Regarding decommissioning waste, ARDT has asked that once a party state generator has provided the U.S. Nuclear Regulatory Commission (NRC) with notice of intent to decommission (known as the Post-Shutdown Decommissioning Activities Report), WCS be required to construct adequate capacity for the waste planned from decommissioning. Finally, ARDT has suggested that once the CWF has reached 80% of the licensed curie limit, WCS should be required to obtain a license amendment to increase the curie limit.

Joint Committee Recommendations The Joint Committee recognized the balancing that is needed to ensure there is capacity for in-compact generators while also allowing WCS to accept imported waste to finance the operation and expansion of the facility. In discussing this balance, a number of suggestions were made. One suggestion was to aggregate the 275,000 annual curie limit over ten years, meaning the limit on imported waste would be 2.75 million curies over ten years. This would provide WCS with the flexibility to bid on potential larger contracts without eliminating or increasing the average annual curie limit. The Joint Committee noted that ARDT is requesting that capacity be guaranteed for in-compact waste without a guarantee that the in-compact generators will use the CWF instead of the alternative disposal and storage options. Furthermore, imposing such a requirement necessarily requires a capital investment by WCS, while at the same time impeding their ability to compete for profit generating contracts. In light of this, the Joint Committee also discussed imposing "take or pay" provisions. This would require the in-compact generators to either use the facility or pay a fee for not meeting certain disposal quotas. This would likely be based on ARDT's suggested operational trigger that considers average historic volume disposed. Requiring the in-compact generators to prepay for capacity was also an option discussed. This would provide WCS with the capital necessary to build out capacity and also serve to incentivize in-compact generators to use the facility.

Fixed Costs/Costs of a State-Operated Facility

Background WCS provided an estimate of the fixed costs of the entire site that included both the CWF and other profit generating activities such as the federal waste disposal site and hazardous waste site. WCS calculated these estimates by averaging the last three years annual costs. Based on these calculations, direct costs and overhead costs were $54 million; selling, general and administrative costs were $18 million; interest expense was $6 million; and, total costs were $78 million. WCS testified that the annual costs to operate the CWF amount to approximately $34 million per year, while revenue specific to the CWF amounts to approximately $24 million per year, resulting in an annual loss of $10 million. However, the true annual cost of operating the CWF alone would be higher because many compliance costs can be shared by both the CWF and other on-site activities. For instance, the CWF is required to maintain certain security and environmental monitoring. Similarly, the RCRA facility and other activities must also maintain similar security and monitoring initiatives. Rather than having duplicative programs, WCS has instead developed comprehensive programs that meet the requirements for all the activities on-site. As such, the expense of those programs is distributed among all on-site activities. If there were no other on-site activities, the cost of those programs would be solely attributable to the CWF and thus increase the annual fixed costs for the CWF. According to the Joint Committee, this is important to note because if the state were required to take over the operations of the CWF, it is unlikely the state would continue to operate the other on-site activities that generate the additional income. Therefore, the state's annual fixed costs would be greater than WCS' current annual fixed costs. Likewise the state's annual loss would

exceed WCS' $10 million per year loss. TCEQ stated, "the costs of a state-run facility are difficult to estimate because no truly comparable example exists." However, TCEQ "strongly recommends" using the fixed costs data provided by WCS in calculating any estimate of the costs of a state-run facility.

Stakeholder Input WCS reiterated that in-compact generators pay four times less than out-of-compact generators, and added that if the state were to operate the facility on a cost recovery basis it is likely that the rates for in-compact generators would likely increase to 10-20 times the current rates.

Joint Committee Recommendations The Joint Committee discussed alternatives to having a private operator for the CWF as it currently exists. The Joint Committee unanimously expressed concerns regarding the potential cost if the state were to operate the CWF. Furthermore, when specifically asked if TCEQ possesses the requisite expertise to manage and operate a CWF, TCEQ acknowledged that they do not. The Joint Committee recognized that no existing state agency or office has the requisite expertise or ability to maintain and operate a CWF. The state would thus need to appropriate funds to secure a contractor to operate the site on the state's behalf.

Contingency Plan

Background The Texas Compact agreement imposes a number of requirements upon the State of Texas by virtue of its status as the host state. Development of a contingency plan, however, is not one of those responsibilities. It is the sole responsibility of the Texas Compact Commission to develop a contingency plan should the CWF need to be closed or otherwise be unable to accept additional waste. While the development of a comprehensive contingency plan has not been completed, the Texas Compact Commission has taken some preliminary steps to create a plan to the extent that they feel they are legally authorized to do so under the current language of the compact agreement.

Stakeholder Input The Texas Compact Commission stated in its testimony that should the Commission determine that there is a threat to in-compact generators' capacity, imports would be halted and the Texas Compact Commission would cease issuing import agreements. Halting imports and ceasing to issue import agreements could certainly be a part of a contingency plan. Taking only those actions, however, does not address the logistics of reopening or utilizing an alternative site should the CWF need to be closed. This is an important consideration, as the State of Texas's obligation to provide a CWF for in-compact generators endures regardless of the current site's viability. The Texas Compact Commission, in its testimony, identified challenges it faces in fulfilling its mandate of developing a contingency plan. Specifically, the Commission testified that despite the mandate to develop a contingency plan, they believe they lack sufficient funds to effectively develop and implement such a plan. The Texas Compact Commission also expressed reservation in directing the State of Texas to take prescribed actions without state input since the state would bear the financial burden of implementing and enforcing a contingency plan, should it become necessary. Another issue the Texas Compact Commission identified as a challenge to fulfilling its mandate is the lack of clarity from the state in designating an agency or office to assist the Commission in development of a plan. In response to this concern, the Texas Compact Commission requested that the State of Texas designate an agency or office to serve as their counterpart to collaborate with the Commission in the development of a plan. Committee members suggested TCEQ would be a logical option, given their level of expertise in environmental permitting and enforcement. The Joint Committee requested that the Commission and TCEQ provide specific details of a comprehensive contingency plan along with areas where clarity from the legislature would be helpful. Specifically, the Joint Committee members requested that, by January 1, 2019, the

Texas Compact Commission identify, broadly, the necessary elements of a comprehensive contingency plan to include an overview of ways the legislature could provide clarity to assist the Texas Compact Commission in the implementation of a contingency plan. An example that was offered was the legislature delineating a clear statutory chain of authority to implement and monitor a contingency plan.

Joint Committee Recommendations In response to the testimony provided by the Texas Compact Commission, the Joint Committee expressed serious concerns that a comprehensive contingency plan has yet to be developed, notwithstanding the Commission's reservations about directing the state to take prescribed actions without input from a designated state office or agency. While the Joint Committee recognized that the Texas Compact Commission does not have authority to access funds to implement the plan, it stated that the legislature could appropriate those funds separately, should the need arise to implement the plan.

Background

Texas and Vermont are currently members of Texas Compact for the purposes of assuring that each state is able to efficiently and safely dispose of low-level radioactive waste. Per the terms of the Texas Compact, the State of Texas serves as the host state, meaning that Texas is responsible for providing a CWG to dispose of low-level waste generated within each state. In exchange for serving as the host state, Texas received $25 million from Vermont. The Texas Compact created the Texas Compact Commission whose primary responsibility is to ensure capacity at the CWF is available for the in-compact generators.

By far the largest generators of low-level waste are the nuclear power plants in each state. There are two operational plants located in Texas and one plant in Vermont, the latter of which is expected to begin decommissioning in late 2019. Other generators include universities and hospitals and research facilities. The in-compact generators are represented by ARDT.

The Texas Compact creates a distinction between "in-compact waste" and "imported waste" or "non-compact waste." In-compact waste refers to waste generated from within the member states of Texas and Vermont. Imported waste, or non-compact waste, is waste generated in any other state. There are currently 34 states that are not in a compact or do not have a facility at which they can dispose of certain classes of low-level waste, namely Class B and Class C waste.

In order to satisfy Texas' obligations under the Texas Compact, the state initially took steps to develop a CWF known as the Sierra Blanca site in Hudspeth County. The site was ultimately unsuccessful in obtaining a license from the Texas Natural Resource Conservation Commission (TNRCC). Subsequently, the legislature created a regulatory structure that allowed for a private operator to receive a permit to construct and operate the CWF. WCS applied for, and was granted, a permit from the TCEQ – the regulatory agency responsible for permitting radioactive waste in Texas. WCS then financed the construction of the CWF, understanding that the state assumes legal liability for the waste buried at the CWF.

For additional information, please contact Texas Compact Commission Executive Director Leigh Ing at (512) 305-8941 or at leigh.ing@tllrwdcc.org.

Nuclear Power Plants and Other NRC Licensees

News Briefs for Nuclear Power Plants Across the Country

The following news briefs provide updates on recent activities, enforcement actions and general events at nuclear power plants and other licensees around the country. The briefs are organized by compact and state.

For additional information, please contact the referenced facility or licensee.

Appalachian Compact/State of Delaware

Christiana Care Health Services On December 4, 2018, the U.S. Nuclear Regulatory Commission (NRC) announced that the agency has proposed a $3,500 civil penalty to a Delaware medical firm for failing to properly secure licensed nuclear material. On May 30, 2018, a physicist for Christiana Care Health Services discovered that 50 iodine-125 seeds were missing from a lab at the firm's offices in Newark, Delaware. The seeds are implanted into patients for the treatment of different types of cancer. Reviews performed by the company determined that seeds were on trays in the lab and inadvertently removed for recycling on March 16, 2018. According to NRC, it is believed that a recycling company later picked up the trays. Christiana Care asked the recycling firm if the boxes holding the materials could be retrieved but was told that was not possible. The seeds were not recovered. The NRC performed inspections at Christiana Care offices in response to the event. During these reviews, the agency identified one apparent violation: the company's failure to properly control and maintain surveillance of licensed nuclear material that was in a controlled or unrestricted area that was not in storage. In light of the low radiation levels associated with the materials involved, no adverse health impacts on workers or members of the public are anticipated because of the incident. Christiana Care will have 30 days to pay the fine or to appeal the decision. *For additional information, please contact Diane Scenci at (610) 337-5330 or Neil Sheehan at (610) 337-5331.*

Central Interstate Compact Compact/States of Kansas and Louisiana

Wolf Creek Nuclear Operating Corporation
On December 18, 2018, NRC announced that the agency is proposing a $232,000 civil penalty to Wolf Creek Nuclear Operating Corporation for a Severity Level II violation related to retaliation against a contract employee who reported a safety concern at the Wolf Creek nuclear power plant near Burlington, Kansas. The violation of NRC requirements for employee protection is related to the contract employee filing a condition report during Wolf Creek's 2016 refueling outage, as well as raising concerns directly to plant management. The NRC's investigation concluded that the plant retaliated against the contract employee with an adverse employment action. On September 10, 2018, NRC staff met with company representatives to discuss the violation in a pre-decisional enforcement conference. Company officials contested the violation while also providing the NRC with information about long-term corrective actions. The company was then given 30 days in which to dispute the fine or request involvement of a neutral third-party mediator to resolve the issue. *For additional information, please contact Scott Burnell at (301) 415-8200.*

River Bend Nuclear Generating Station On December 21, 2018, NRC renewed the operating license of the River Bend Nuclear Generating Station for an additional 20 years. River Bend's license will now expire on August 29, 2045. The plant, which has a single boiling-water reactor, is located in St. Francisville, Louisiana – approximately 24 miles northwest of Baton Rouge. The operator, Entergy Nuclear Operations Inc., submitted the renewal application on

May 31, 2017. The NRC staff's review of the application proceeded on two tracks. First, a safety evaluation report was issued on August 16, 2018. Second, a supplemental environmental impact statement was issued on November 8, 2018. The NRC's Advisory Committee on Reactor Safeguards (ACRS) also reviewed the staff's work. Renewal of the River Bend operating license, which became effective on December 20, 2018, brings to 92 the number of commercial nuclear power reactors with renewed licenses (four of those have since permanently shut down). Applications for an additional two renewals are currently under review. *The River Bend documents, as well as other information about the River Bend license renewal application, are available on the NRC website at www.nrc.gov. For additional information, please contact Scott Burnell at (301) 415-8200.*

Terracon Consultants, Inc. On December 20, 2018, NRC announced that the agency is proposing a $29,000 civil penalty to Terracon Consultants Inc. of Olathe, Kansas for violations associated with the transportation of a portable nuclear gauge. Four violations of NRC requirements were identified in an NRC inspection report dated September 17, 2018. The inspection involves an incident in which a technician failed to secure a portable nuclear gauge being transported on a pickup truck on a public highway. Company officials responded to the violations in a letter dated September 24, 2018. Terracon did not refute the violations and provided the NRC with information about long-term corrective actions. The company has 30 days in which to dispute the fine or request involvement of a neutral third- party mediator to resolve the issue. *For additional information, please contact Victor Dricks at (817) 200-1128.*

Waterford Nuclear Power Plant On December 31, 2018, NRC renewed the operating license of the Waterford Steam Electric Station for an additional 20 years. Waterford's license will now expire on December 18, 2044. The plant, which has a single pressurized-water reactor, is located in Killona, Louisiana – approximately 25 miles west of New Orleans. The operator, Entergy Operations Inc., submitted the renewal application in March 2016. The NRC staff review of the application proceeded on two tracks. A safety evaluation report was issued on August 17, 2018 and a supplemental environmental impact statement was issued on November 20, 2018. The ACRS also reviewed the staff work. Renewal of the Waterford operating licenses brings to 93 the number of commercial nuclear power reactors with renewed licenses (four of those have since permanently shut down). Several applications for additional renewal are currently under review. *The Waterford plant documents, as well as other information regarding the Waterford license renewal application, are available on the NRC website at www.nrc.gov. For additional information, please contact Scott Burnell at (301) 415-8200.*

Central Midwest Compact/State of Illinois

Clinton Nuclear Power Plant On November 30, 2018, NRC met with Exelon Generation officials to discuss a preliminary inspection finding regarding the licensee's failure to follow multiple procedures to ensure an emergency diesel generator was operable during a recent refueling outage at the Clinton nuclear power plant, which is located in Clinton, Illinois. Following the NRC's discussion with Exelon, members of the public were able to ask questions of agency staff. The NRC inspection report documents the apparent violation, preliminarily determined to be of low to moderate (white) safety significance. The NRC evaluates regulatory performance at commercial nuclear plants with a color-coded process that classifies inspection findings as green, white, yellow or red in order of increasing safety significance. The NRC officials did not make a decision on this issue at the meeting, but rather plan to carefully review the information provided. According to NRC, the decision will be documented in publicly available correspondence. *For additional information, please contact*

Viktoria Mitlyng at (630) 829-9662 or Prema Chandrathil at (630) 829-9663.

Northwest Compact/State of Alaska

Alaska Medical Center On December 17, 2018, NRC met with officials from Providence Alaska Medical Center of Anchorage, Alaska to discuss four apparent violations identified by the NRC during a special inspection. The meeting, which was held at the NRC's Region IV office in Arlington, Texas, was open to public observation. NRC officials were available to answer questions from the public following the business portion of the meeting. The public was also able to observe the meeting and ask questions via a special webinar. The purpose of the pre-decisional enforcement conference was to discuss the violations identified in an NRC inspection report dated November 2, 2018. No decision on the final safety significance of the violations or any NRC actions were made at the meeting. *For additional information, please contact Victor Dricks at (817) 200-1128.*

Southeast Compact/States of Alabama, Florida and Mississippi

Bellefonte Reactors On November 26, 2018, the U.S. Nuclear Regulatory Commission (NRC) announced that the agency has received an application from Nuclear Development LLC to transfer the deferred construction permits for the unfinished Bellefonte Unit 1 and 2 reactors in Alabama. Nuclear Development filed the application on November 13, 2019 seeking to transfer the permits from the Tennessee Valley Authority. The Bellefonte units are partially complete pressurized-water reactors located approximately six miles northeast of Scottsboro, Alabama. The NRC placed the Bellefonte construction permits in deferred status in 2010. The NRC staff is reviewing the application to determine if it has sufficient information to complete the agency's review. If the application is determined to be complete, the staff will docket it and publish a notice of opportunity to request an adjudicatory hearing before the NRC's Atomic Safety and Licensing Board (ASLB). *The application, as well as information about the license transfer process, is available on the NRC website at www.nrc.gov. For additional information, please contact Scott Burnell at (301) 415-8200.*

Browns Ferry Nuclear Power Plant On November 14, 2018, NRC launched a special inspection at the Browns Ferry nuclear power plant to determine how and why a diver received a dose rate alarm during underwater work in the Unit 1 equipment pit. The plant, operated by the Tennessee Valley Authority, is located near Athens, Alabama – approximately 32 miles west of Huntsville. On November 7, 2018, a diver working on an underwater steam dryer system received an electronic dose rate alarm when he approached the equipment pit wall to manipulate a cable. Upon receiving the alarm, the diver immediately left the pit and his unintended dose did not exceed regulatory limits. The licensee later determined that a basket of used filters had been moved from the spent fuel pool into a position near the equipment wall and this was not communicated to the next shift. NRC's two-person inspection team will identify the circumstances surrounding the event; review the licensee's immediate response to the alarm; evaluate their corrective actions and causal analysis; and, assess the program for diving, work control, radiological surveys and movement of highly radioactive material. The onsite portion of the inspection took several days. A report documenting the results of the inspection is expected to be issued within 45 days of its completion. *For additional information, please contact Roger Hannah at (404) 997-4417 or Joey Ledford at (404) 997-4416.*

Turkey Point Nuclear Power Plant On December 4, 2018, the ASLB heard oral arguments on a hearing request regarding the subsequent license renewal application for Turkey Point Units 3 and 4 near Miami, Florida. The Board is composed of members of the ASLB

Panel, which is an independent body within the NRC that conducts adjudicatory hearings and renders decisions on legal challenges to licensing actions. The Board heard arguments on contentions filed by the Southern Alliance for Clean Energy (SACE), as well as a group filing from Friends of the Earth, Natural Resources Defense Council and Miami Waterkeeper (Joint Petitioners). The contentions challenge a request from Florida Power & Light (FP&L) to renew the Turkey Point licenses for an additional 20 years. Members of the public and media were allowed to observe the oral argument, but participation was limited to the representatives of SACE, the Joint Petitioners, FP&L and NRC staff. *Documents related to the hearing request are available on the NRC's Electronic Hearing Docket by clicking on the folder entitled "Turkey Point 50-250 & 50-251-SLR" on the left side of the page. For additional information, please contact Scott Burnell at (301) 415-8200.*

Grand Gulf Nuclear Power Plant On December 18, 2018, NRC began a special inspection at the Grand Gulf nuclear power plant to review events that led to, and occurred following, an unplanned shutdown on December 12, 2018. The plant, operated by Entergy Operations, is located in Port Gibson, Mississippi. The plant was operating at full power when operators noticed an unexpected increase in reactor power and decided to shut down as a precautionary measure. The reactor was safely shut down but some equipment issues occurred that the agency wants to better understand. The two-member NRC team spent about a week on site developing a chronology of the event, as well as evaluating the licensee's cause analysis and the adequacy of corrective actions. An inspection report documenting the team's findings will be publicly available within 45 days of the end of the inspection. *For additional information, please contact Victor Dricks at (817) 200-1128.*

Industry/Holtec International, Inc.

Enforcement Action Initiated Against Holtec re Spent Fuel Cask Design

On December 27, 2018, the U.S. Nuclear Regulatory Commission announced that the agency plans to bring an enforcement action against Holtec International — the manufacturer of the steel and concrete casks used at the Vermont Yankee nuclear power plant to store spent fuel.

NRC officials will hold a pre-decisional enforcement conference with Holtec officials from 1:00 – 5:00 p.m. ET on January 9, 2019. The conference will be held in the Commission Hearing Room at NRC Headquarters, which are located at 11555 Rockville Pike in Rockville, Maryland. The conference will be open to the public and will be webcast.

For additional information on the webcast, please go to https://video.nrc.gov.

Background

The issue originated when a loose bolt was identified in the 18-foot tall casks at the San Onofre Nuclear Generating Station in California in March 2018. Workers at the San Onofre Nuclear power plant discovered a loose four-inch stainless steel pin at the bottom of a canister as it was being prepared for loading with spent fuel. The pin was part of a shim designed to support the fuel basket and allow airflow to the fuel assemblies within the canister. As such, the shim is considered essential to the function of the fuel basket. Regulators are concerned that the problem could affect the ability of the casks to effectively cool the nuclear fuel.

Since the Vermont Yankee plant shares a similar cask design as San Onofre, a two-month halt was initiated earlier this year when Entergy Nuclear Corporation was transferring the plant's spent nuclear fuel to the air-cooled storage casks. The transfer resumed in May 2018 and was completed this past summer.

During the two-month hiatus at Vermont Yankee, Entergy inspected the empty Holtec Hi-Storm 100 casks that Holtec had already provided for the fuel transfer and storage project and found no problems with the casks. Entergy used a total of 58 casks, but it could not inspect the canisters already filled with fuel. According to NRC, 31 of the 58 casks at the Vernon site were of the new Holtec design.

Transfer of the spent fuel was a key condition of the pending sale of Vermont Yankee by Entergy to NorthStar Holding Company. The sale, which has received both state and federal approval, is expected to be completed early in the 2019 calendar year. (See *LLW Notes*, September/ October 2018, pp. 20-21.)

Overview

The action against Holtec International involves a new design that the company adopted for its casks before getting NRC approval. The design has since been approved, according to an agency representative.

In particular, NRC asserts that Holtec changed the design of the Hi-Storm 100 casks — specifically the four-inch stainless steel pins that hold the basket, which in turn holds the spent fuel. Holtec determined that it did not need to conduct a written evaluation, which was a violation of NRC safety regulations according to agency officials. In the notice of violation from the NRC, the agency referred to "nonconforming and degraded conditions at both SONGS (San Onofre Generating Station) and VY [Vermont Yankee], respectively."

NRC conducted an inspection at Holtec's offices in Camden, New Jersey. On November 29, 2018, NRC issued an inspection report identifying two apparent violations of the agency's quality assurance regulations. The NRC determined Holtec, when it changed the shim to the pin design in 2016, failed to establish adequate design control measures for selecting and applying materials, parts, equipment and processes essential to the function of safety-related structures, systems and components. Holtec also failed to maintain written records of changes to its canister design, including an evaluation of why the design change could be implemented without applying to the NRC for an amendment to the canister's Certificate of Compliance.

The NRC offered Holtec a choice between the pre-decisional enforcement conference or third-party mediation. Holtec chose the conference, during which its officials will be able to present additional information for the NRC staff to consider in assessing the significance of the subject violations. No final action will be taken at the conference on January 9, 2019.

In addition to San Onofre and Vermont Yankee, the Holtec Hi-Storm 100 casks were also used to store spent fuel at nuclear plants including Dresden in Illinois; Grand Gulf in Mississippi; Hatch in Georgia; Columbia in Washington; Watts Bar in Tennessee; and, Callaway in Missouri.

For additional information, please contact David McIntyre of the NRC at (301) 415-8200.

Holtec Loads Record Number of Multi-Purpose Canisters in 2018

By press release dated November 27, 2018, Holtec announced the successful dry storage implementations of both Pressurized Water Reactor (PWR) and Boiling Water Reactor (BWR) multi-purpose canisters (MPCs) in HI-STORM vertical ventilated modules at numerous nuclear plant sites, setting new records in their curie content and heat load.

Overview

Out of the total of 170 HI-STORM systems loaded to date, Holtec's own site services group has loaded 135 systems. As of the end of November 2018, 1,235 Holtec systems have been loaded globally. The nuclear units that have increased their dry storage population of HI-STORM vertical ventilated systems (VVMs) in 2018 include:

- Browns Ferry (Tennessee Valley Authority);
- Callaway (Ameren);
- Clinton (Exelon);
- Comanche Peak (Luminant);
- Diablo Canyon (Pacific Gas & Electric);
- D.C. Cook (American Electric Power);
- Farley (Southern Nuclear);
- Pilgrim (Entergy);
- SONGS (Southern California Edison);
- Vermont Yankee (Entergy);
- Vogtle (Southern Nuclear); and
- Watts Bar (Tennessee Valley Authority).

Details

The following analysis is taken from the Holtec press release. Stakeholders with questions or seeking additional detail should contact Holtec directly.

- Of the loadings this calendar year listed above, Callaway is a subterranean (below-ground) storage system known as HI-STORM UMAX, which is also designated as the storage technology for the Consolidated Interim Storage Facility (CISF) named HI-STORE CISF. Holtec is seeking to license HI-STORE CISF with grass roots support from the Eddy Lea Energy Alliance (ELEA), which represents the counties of Eddy, Lea and the cities of Hobbs and Carlsbad in southeastern New Mexico.

- D.C. Cook tops the list of operating plants for loading the most MPCs in one campaign (16), whereas Tennessee Valley Authority (TVA) claims the top billing for loading the maximum heat load canister at 29.90 kW.

- The crew dose came in at or below the target at nearly every plant, with Exelon's Clinton Station performing the best in this category (approximately 75% below the estimated dose).

- Vermont Yankee's loading was its last with its entire in-pool inventory of used fuel placed in dry storage in preparation for decommissioning. A total of 45 MPCs were loaded in Vermont Yankee's "whole pool de-fueling" campaign that was completed this summer.

- Pilgrim, also scheduled to be decommissioned, still has 2,378 fuel assemblies in the pool, which will be transferred to dry storage shortly after its shutdown in mid-2019.

- Twenty nine MPCs have been loaded at SONGS with the loading of the remaining 44 scheduled to be completed by mid-2019.

- Inaugural MPC loading campaigns are imminent at South Texas Project and Laguna Verde (Mexico).

- Ukraine's national nuclear utility, NAEK Energoatom, is poised to begin operating the world's first functioning CISF utilizing Holtec's VVER Canisters in HI-STORM vertical ventilated storage modules beginning in spring 2020.

- South Africa's Koeberg Nuclear Power Station will begin its dry storage deployment using HI-STAR 100s next year.

- Within the Chernobyl Exclusion Zone, there are currently more than 22,000 RBMK assemblies from the long-shuttered Chernobyl reactors stored at an aging wet spent fuel storage facility called ISF-1. Holtec is in the final phases of completing the construction, testing and commissioning of dry storage facility called ISF-2. According to Holtec, ISF2 includes world's largest "hot cell" for segmentation of RBMK fuel assemblies. The dismembered fuel assemblies will be stored in Holtec's patented *Double Walled Canisters* (DWCs).

"A relentless drive to make fuel loadings safe and efficient, to reduce radiation dose to the workers and the environment, and to make dry storage systems an invincible fortress of safety, are all core undertakings of our Company," states Joy Russell, Holtec's Chief Communications Officer. "Lessons learned from ongoing operations are continuously leveraged to further strengthen our dry storage program across the 16 countries where we have the privilege to serve."

Background

Holtec International is a privately held energy technology company with operation centers in Florida, New Jersey, Ohio and Pennsylvania in the United States. Globally, Holtec International has operation centers in Brazil, Dubai, India, South Africa, Spain, the United Kingdom and Ukraine. Holtec's principal business concentration is in the nuclear power industry. Since the 1980s, Holtec has been densifying wet storage in nuclear plants' spent fuel pools, which defers the need for and expense of alternative measures by as much as two decades. Holtec has done this at over 110 reactor units in the United States and abroad. Holtec also offers services regarding dry storage and transport of nuclear fuel. Holtec is working to develop the world's first below-ground CISF in New Mexico and a 160-Megawatt *walk away safe* small modular reactor, SMR-160. The SMR-160 is developed to bring cost competitive carbon-free energy to all corners of the earth including water-challenged regions. Holtec is also a major supplier of special-purpose pressure vessels and critical-service heat exchange equipment such as air-cooled condensers, steam generators, feedwater heaters and water-cooled condensers. Virtually all products produced by Holtec are built in its three large manufacturing plants in the United States and one in India.

To learn more about Holtec International, please visit www.holtecinternational.com.

US Ecology, Inc.

US Ecology Announces Purchase of Ecoserv Industrial Disposal

On November 14, 2018, US Ecology announced the acquisition of Ecoserv Industrial Disposal — a wholly owned subsidiary of Ecoserv and a leading provider of non-hazardous industrial wastewater disposal solutions in the Gulf Coast.

Overview

The Ecoserv Industrial Disposal facility employs deep-well injection technology and is strategically positioned within reach of key markets such as Houston and Beaumont in Texas and Lake

Charles in Louisiana. The facility serves refinery, petrochemical and environmental services customers. Total consideration for the business and related property was $87.2 million, subject to a working capital adjustment, and will be funded from cash on hand and US Ecology's existing credit facility.

"This acquisition adds unique, high volume industrial liquids disposal capabilities, complements other investments we've made in the region, and strengthens our comprehensive environmental services offerings," commented US Ecology Chair, President and Chief Executive Officer Jeff Feeler. "The facility, permitted for a wide variety of non-hazardous industrial waste including solids, sludges, leachate, and ammonia, offers a lower cost alternative to traditional wastewater treatment."

The transaction closed on November 14, 2018. It will be reported as part of the Environmental Services segment. The transaction is expected to be accretive to earnings per share. US Ecology expects no significant financial impact to 2018 earnings per share or Adjusted EBITDA for the six weeks of ownership in 2018 and reaffirms its previously issued 2018 earnings guidance that was disclosed in the company's third quarter earnings release on November 1, 2018. US Ecology expects the acquisition to contribute approximately $9.0 million to $10.0 million of Adjusted EBITDA in 2019.

Background

US Ecology is a North American provider of environmental services to commercial and government entities. The company addresses the complex waste management needs of its customers, offering treatment, disposal and recycling of hazardous, non-hazardous and radioactive waste, as well as a wide range of complementary field and industrial services.

"US Ecology's focus on safety, environmental compliance and best–in-class customer service enables us to effectively meet the needs of our customers and to build long-lasting relationships," states the company's press release. "US Ecology has been protecting the environment since 1952 and has operations in the United States, Canada and Mexico."

For additional information, please contact Joe Weismann at (208) 331-8400 or at jweismann@usecology.com or go to www.usecology.com.

Congress

Nuclear Waste Management Funding Efforts Stall in Congress

In the week prior to Christmas, members of Congress attempted to add money into programs for the storage and permanent disposal of the nation's nuclear waste – including efforts to add tens of millions of dollars for the long-delayed Yucca Mountain radioactive waste repository in Nevada and to add approximately $120 million for nuclear waste management to the proposed continuing resolution to fund government operations until February 8, 2019.

The efforts were unsuccessful, however, receiving little attention as President Donald Trump and Congressional leaders focused on outstanding appropriations legislation to keep the full government open.

Overview

The U.S. Department of Energy (DOE) and the U.S. Nuclear Regulatory Commission (NRC) received full-year funding in a multi-agency budget bill that was signed into law in September 2018. However, neither agency received any of the nearly $170 million that was requested for Yucca Mountain licensing. Recently, it was speculated that lawmakers might add money for Yucca Mountain into the follow-on to the existing continuing resolution.

One effort to address nuclear waste via amendments to the proposed continuing resolution would have provided $90 million from the Nuclear Waste Fund to DOE for civilian "nuclear waste disposal activities … including the acquisition of any real property or facility construction, or expansion, and interim storage activities." The Department would have received another $30 million for defense nuclear waste disposal operations and the NRC would have also received $30 million. A separate proposed amendment, cited directly as the Nuclear Waste Policy Amendments Act of 2018, focused on "monitored retrievable storage" from which waste could eventually be recovered for permanent disposal – i.e., consolidated interim storage.

However, there was no language on radioactive waste in the nine-page measure that the Senate approved late Wednesday (December 19, 2018), nor was any such language included in the 59-page version that the House passed on Thursday (December 20, 2018).

Background

In 1987, Congress designated Yucca Mountain as the permanent site for disposal of tens of thousands of tons of spent fuel from commercial nuclear reactors and high-level radioactive waste from defense nuclear work. In 2008, DOE filed its license application with the NRC. However, the Obama administration halted the proceeding two years later. The Trump administration has unsuccessfully sought funding to resume licensing in its first two budget proposals.

Currently, the waste remains on-site at its points of generation, including nuclear power plants that are located in more than 30 states. Nuclear utilities paid approximately $40 billion into the federal Nuclear Waste Fund that was intended to pay for the repository. To date, utilities have collected more than $7 billion in damages from the U.S. Treasury for DOE's failure to start taking their spent fuel by the congressional deadline of January 31, 1998. According to news reports, the liability is eventually expected to exceed $30 billion.

To date, two companies have applied for 40-year NRC licenses to build and operate separate facilities for spent fuel in Texas and New Mexico. Interim Storage Partners, LLC filed the first application for a site in Andrews County, Texas

on April 28, 2016. (See *LLW Notes*, May/June 2016, pp. 16-17.) Holtec International filed the other application for a site in Lea County, New Mexico on March 31, 2017. (See *LLW Notes*, March/April 2018, pp. 16-18.)

For additional information on the interim storage applications, see https://www.nrc.gov/waste/spent-fuel-storage/cis.html.

Next Steps

The next major development in nuclear waste management is likely to be the release of the fiscal 2020 budget proposal in February 2019. To date, DOE and NRC have not indicated whether or not they plan to again request funds for Yucca Mountain licensing.

Federal Agencies

DOE Not Affected by Government Shutdown

EPA Included in Affected Agencies

The U.S. Department of Energy (DOE) is not affected by the partial government shutdown that started at midnight on Friday – December 21, 2018. Despite the partial government shutdown, DOE employees and contractors (including in Oak Ridge) are expected to continue their normal work schedules.

"The partial government shutdown does not impact Department of Energy facilities," federal officials said in a statement. "DOE's fiscal year 2019 appropriations bill was approved by Congress and signed by the [P]resident in September [2018]. DOE employees and contractors are expected to continue to report to work according to their usual work schedule."

The U.S. Environmental Protection Agency (EPA), however, is amongst the agencies affected by the partial government shutdown.

Overview

According to the Appropriations Committee of the U.S. House of Representatives, the funding appropriations lapse affects approximately 25 percent of the federal government. Affected agencies include the departments of Agriculture, Commerce, Homeland Security, Housing and Urban Development, Interior, Justice, State, Transportation and Treasury. Also affected are the U.S. Environmental Protection Agency, Food and Drug Administration, National Aeronautics and Space Administration, the federal judiciary, and other related government programs.

According to news reports, the partial shutdown will not affect core governmental functions like the Postal Service, the U.S. military and

Department of Veterans Affairs. Entitlement programs – including Social Security, Medicaid, Medicare and food stamps – are also expected to continue uninterrupted.

Nonetheless, approximately 380,000 workers at nine of 15 cabinet-level departments have been sent home and will not be paid for the time off, according to news reports. Another 420,000 deemed too essential to be furloughed will be forced to work without pay. After past shutdowns, such workers have been reimbursed later.

Background

Among the various DOE sites and operations in Oak Ridge are East Tennessee Technology Park, Oak Ridge Institute for Science and Education, Oak Ridge National Laboratory, Oak Ridge Office, Oak Ridge Office of Environmental Management, Office of Scientific and Technical Information and the Y-12 National Security Complex.

The National Nuclear Security Administration, a DOE agency, oversees Y-12.

For additional information on the government shutdown, please go to https:// appropriations.house.gov.

U.S. Department of Energy (DOE)

DOE Extends Public Comment Period re High-Level Waste Definition

The U.S. Department of Energy (DOE) has agreed to extend the public comment period on the Department's interpretation of the definition of the statutory term "high-level radioactive waste" (HLW) as set forth in the Atomic Energy Act of 1954 and the Nuclear Waste Policy Act of 1982. (See *LLW Notes*, September/October 2018, pp. 1, 28-31.) Senator Ron Wyden (D-OR) and 75 national organizations – including Hanford Challenge, Columbia Riverkeeper, Heart of America Northwest and the Natural Resources Defense Council (NRDC) – supported the extension.

"This statutory term indicates that not all wastes from the reprocessing of spent nuclear fuel ("reprocessing wastes") are HLW," states DOE in its October 2018 *Federal Register* notice, "and DOE interprets the statutory term such that some reprocessing wastes may be classified as not HLW (non-HLW) and may be disposed of in accordance with their radiological characteristics."

Defining less of the nation's nuclear waste as HLW could provide DOE with greater flexibility on how to address some of the 56 million gallons of waste that is currently being stored in underground tanks. Accordingly, it may potentially speed up environmental cleanup at the Hanford nuclear reservation and other sites, as well as save billions of dollars on waste management and disposal activities. Energy Communities Alliance, which includes a coalition of local governments near the Hanford site, supports the proposal. Hanford Challenge and other critics, however, argue that it may result in

authorizing more waste to remain in the ground at these sites.

The 60-day public comment period, which was originally set to end in early December 2018, has been extended until January 9, 2019.

For additional information, see 83 Federal Register 50,909 (October 10, 2018). Interested stakeholders may submit comments to HLWnotice@em.doe.gov.

High-Level Radioactive Waste Interpretation

DOE interprets the term "high-level radioactive waste," as stated in the Atomic Energy Act of 1954 as amended (AEA) and the Nuclear Waste Policy Act of 1982 as amended (NWPA), in a manner that defines DOE reprocessing wastes to be classified as either HLW or non-HLW based on the radiological characteristics of the waste and their ability to meet appropriate disposal facility requirements. The basis for DOE's interpretation comes from the AEA and NWPA definition of HLW:

A. the highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and,

B. other highly radioactive material that the Commission, consistent with existing law, determines by rule requires permanent isolation.

In paragraph A, according to the *Federal* Register notice, Congress limited HLW to those materials that are both "highly radioactive" and "resulting from the reprocessing of spent nuclear fuel." Reprocessing generates liquid wastes, with the first cycle of reprocessing operations containing the majority of the fission products and transuranic elements removed from the spent nuclear fuel (SNF). Thus, in paragraph A, Congress distinguished HLW with regard to its form as both "liquid waste produced directly in reprocessing" and "any solid material derived from such liquid waste that contains fission products in sufficient concentrations," states the *Federal* Register notice.

In paragraph B, Congress defined HLW also to include "other highly radioactive material" that the U.S. Nuclear Regulatory Commission (NRC) determines by rule "requires permanent isolation," continues the *Federal* Register notice. HLW under paragraph B includes highly radioactive material regardless of whether the waste is from reprocessing or some other activity. Further, under paragraph B, classification of material as HLW is based on its radiological characteristics and whether the material requires permanent isolation, states the *Federal* Register notice.

According to the *Federal* Register notice, the common element of these statutory paragraphs defining HLW is the requirement and recognition that the waste be "highly radioactive." Additionally, both paragraphs reflect a primary purpose of the NWPA, which is to define those materials for which disposal in a deep geologic repository is the only method that would provide reasonable assurance that the public and the environment will be adequately protected from the radiological hazards the materials pose.

The terms "highly radioactive" and "sufficient concentrations" are not defined in the AEA or the NWPA. By providing in paragraph A that liquid reprocessing waste is HLW only if it is "highly radioactive" and that solid waste derived from liquid reprocessing waste is HLW only if it is "highly radioactive" and contains fission products in "sufficient concentrations" without further defining these standards, the *Federal Register* notice asserts that Congress left it to DOE to determine when these standards are met. Given Congress' intent that not all reprocessing waste is HLW, the *Federal Register* notice states that it is appropriate for DOE to use its expertise to interpret the definition of HLW, consistent with

proper statutory construction, to distinguish waste that is non-HLW from waste that is HLW.

The DOE interpretation is informed by the radiological characteristics of reprocessing waste and whether the waste can be disposed of safely in a facility other than a deep geologic repository. The *Federal Register* notice explains that this interpretation is based upon the principles of the NRC's regulatory structure for the disposal of low-level radioactive wastes.

In its regulations, NRC has identified four classes of low-level radioactive waste (LLW) — Class A, B or C — for which near-surface disposal is safe for public health and the environment, as well as Greater-than-Class C (GTCC) low-level radioactive waste for which near-surface disposal may be safe for public health and the environment. This waste classification regime is based on the concentration levels of a combination of specified short-lived and long-lived radionuclides in a waste stream, with Class C LLW having the highest concentration levels. Waste that exceeds the Class C levels is evaluated on a case-specific basis to determine whether it requires disposal in a deep geologic repository or whether an alternative disposal facility can be demonstrated to provide safe disposal. According to the *Federal Register* notice, the need for disposal in a deep geologic repository results from a combination of two radiological characteristics of the waste: (1) high activity radionuclides, including fission products, which generate high levels of radiation; and, (2) long-lived radionuclides which, if not properly disposed of, would present a risk to human health and the environment for hundreds of thousands of years.

Because the NRC has long-standing regulations that set concentration limits for radionuclides in waste that is acceptable for near-surface disposal, the *Federal Register* notice contends that it is reasonable to interpret "highly radioactive" to mean, at a minimum, radionuclide concentrations greater than the Class C limits. Reprocessing waste that does not exceed the Class C limits is non-HLW.

DOE interprets "sufficient concentrations" in the statutory context in which the definition was enacted, which is focused on protecting the public and the environment from the hazards posed by nuclear waste. In addition to the characteristics of the waste itself, the risk that reprocessing waste poses to human health and the environment depends on the physical characteristics of the disposal facility and that facility's ability to safely isolate the waste from the human environment. Relevant characteristics of a disposal facility may include the depth of disposal; use of engineered barriers; and, geologic, hydrologic and geochemical features of the site. Taking these considerations into account, the *Federal Register* notice states that it is reasonable to interpret "sufficient concentrations" to mean concentrations of fission products in combination with long-lived radionuclides that would require disposal in a deep geologic repository.

Accordingly, under DOE's interpretation, solid waste that exceeds the NRC's Class C limits would be subject to detailed characterization and technical analysis of the radiological characteristics of the waste. This, combined with the physical characteristics of a specific disposal facility and the method of disposal, would determine whether the facility could meet its performance objectives and if the waste can be disposed of safely. The waste characterization and analysis process would govern this approach, as well as the performance objectives for the disposal facility established by the applicable regulator, to ensure that it is protective of human health and the environment.

The DOE interpretation does not require the removal of key radionuclides to the maximum extent that is technically and economically practical before DOE can define waste as non-HLW. According to the *Federal Register* notice, nothing in the statutory text of the AEA or the NWPA requires that radionuclides be removed to

the maximum extent technically and economically practical prior to determining whether waste is HLW. DOE has determined that the removal of radionuclides from waste that already meets existing legal and technical requirements for safe transportation and disposal is unnecessary and inefficient, as well as does not benefit human health or the environment. To the contrary, the *Federal Register* notice states that it potentially presents a greater risk to human health and the environment because it prolongs the temporary storage of waste.

Therefore, under DOE's interpretation, waste resulting from the reprocessing of SNF is non-HLW if the waste:

I. does not exceed concentration limits for Class C low-level radioactive waste as set out in section 61.55 of title 10, Code of Federal Regulations; or,

II. does not require disposal in a deep geologic repository and meets the performance objectives of a disposal facility as demonstrated through a performance assessment conducted in accordance with applicable regulatory requirements.

Reprocessing waste meeting either I or II of the above is non-HLW. Therefore, according to the *Federal Register* notice, such waste may be classified and disposed in accordance with its radiological characteristics in an appropriate facility provided all applicable requirements of the disposal facility are met.

Request for Comments

The Department is specifically requesting comments on its interpretation that reprocessing waste meeting either of the two criterion stated above is non-HLW. The *Federal Register* notice is intended to solicit public feedback on the DOE interpretation to better understand stakeholder perspectives prior to appropriate input and consultation with affected state and local regulators and any waste disposal classification decisions. According to the *Federal Register* notice, the Department will consider all comments received during the public comment period, and modify its proposed approach, as appropriate, based on public comment.

Per the *Federal Register* notice, DOE invites stakeholders to submit written comments on its interpretation. The original 60-day public comment period began on October 10, 2018 and was scheduled to end on December 10, 2018. The extension moved the deadline for submitting comments to January 9, 2019.

Interested stakeholders may submit comments via:

- e-mail by sending comments to HLWnotice@em.doe.gov in MicrosoftTM Word, or PDF file format, and avoid the use of encryption; or,

- mail by sending comments to: Theresa Kliczewski, U.S. Department of Energy, Office of Environmental Management, Office of Waste and Materials Management (EM–4.2), 1000 Independence Avenue SW, Washington, DC 20585.

DOE will consider all comments received or postmarked by January 9, 2019.

Background

DOE manages large inventories of legacy waste resulting from SNF reprocessing activities from atomic energy defense programs – i.e., nuclear weapons production. DOE also manages a small quantity of vitrified waste from a demonstration of commercial SNF reprocessing. Reprocessing generally refers to the dissolution of irradiated SNF in acid, generating liquid or viscous wastes and the chemical processing to separate the fission products or transuranic elements of the SNF from the desired elements of plutonium and uranium, which are recovered for reuse. Liquid

reprocessing wastes have been or are currently stored in large underground tanks at three DOE sites: the Savannah River Site (SRS) in South Carolina; the Idaho National Laboratory (INL) in Idaho; and, the Office of River Protection at the Hanford Site in Washington. Solid reprocessing wastes are liquid wastes that have been immobilized in solid form and are currently stored at SRS, INL and the West Valley Demonstration Project in New York.

DOE's interpretation of HLW is that reprocessing waste is non-HLW if the waste:

I. does not exceed concentration limits for Class C low-level radioactive waste as set out in section 61.55 of title 10, Code of Federal Regulations; or,

II. does not require disposal in a deep geologic repository and meets the performance objectives of a disposal facility as demonstrated through a performance assessment conducted in accordance with applicable regulatory requirements.

Under DOE's interpretation, waste meeting either of these criteria is non-HLW and may be classified and disposed of in accordance with its radiological characteristics.

The *Federal Register* notice states that, at this time, DOE is not making (and has not made) any decisions on the disposal of any particular waste stream. Disposal decisions, when made, will be based on the consideration of public comments in response to the *Federal Register* notice and prior input and consultation with appropriate state and local regulators and stakeholders. DOE will continue its current practice of managing all its reprocessing wastes as if they were HLW unless and until a specific waste is determined to be another category of waste based on detailed technical assessments of its characteristics and an evaluation of potential disposal pathways, according to the *Federal Register* notice.

For additional information, please contact Theresa Kliczewski at HLWnotice@em.doe.gov or at U.S. Department of Energy, Office of Environmental Management, Office of Waste and Materials Management (EM–4.2), 1000 Independence Avenue SW, Washington, DC 20585 or at (202) 586-3301.

U.S. Nuclear Regulatory Commission

Andrea Kock Named NRC's MSST Director

Recently, Andrea Kock was named the Director of the Division of Materials Safety, Security, State and Tribal Programs (MSST) at the U.S. Nuclear Regulatory Commission (NRC).

Kock — who often attended and participated in Low-Level Radioactive Waste Forum (LLW Forum) meetings on behalf of the NRC — previously served as Deputy Director of the NRC's Division of Decommissioning, Uranium Recovery and Waste Programs (DURWP) in the Office of Nuclear Materials Safety and Safeguards (NMSS).

MSST responsibilities and duties include the following:

- oversees and implements the National Materials Program to enable the safe and secure use of radioactive materials in medical, industrial, and academic applications for beneficial civilian purposes;
- develops policy and procedures for assessing performance and provides technical support and guidance to the Regions for materials licensing, inspection and enforcement activities;
- responds to allegations received by the office involving NRC materials licensees and manages allegations involving Agreement State programs;

- maintains the Nuclear Materials Events Database, assesses materials events reported to NRC, analyzes licensee performance and evaluates event trends;
- has responsibility for the sealed source and device, general license, master materials license and exempt distribution licensing programs;
- provides guidance to states intending to become Agreement States and reviews new applications for Section 274b Agreements in coordination with other NRC offices and the Regions;
- coordinates with the Agreement States to plan and provide for compatibility in regulatory approaches;
- reviews Agreement State programs for continued adequacy to protect public health and safety and evaluates compatibility with NRC's regulatory program through the Integrated Materials Performance Evaluation Program (IMPEP);
- coordinates with Regional State Agreement Officers (RSAO's) and provides program direction and guidance;
- provides technical support for training of regional and Agreement State licensing and inspection staffs;
- makes the NRC determination required by Section 274c prior to Agreement State termination of uranium milling licenses;
- has responsibility for coordination with Agreement States on Section 274i Agreements;
- has responsibility for safety and security interface issues between NRC and the Agreement States;
- oversees the development and nationwide implementation and integration of source security enhancement initiatives;
- coordinates with the NRC's Office of Nuclear Security and Incident Response (NSIR) on the necessary contingency planning and emergency response operations associated with source, byproduct and special nuclear material under its purview;
- incorporates information technology tools into the National Materials Program and manages the use of these tools to improve the safety and control of licensed and registered radioactive materials;
- establishes and maintains effective communications and working relationships between the NRC and states, local governments, other federal agencies and Native American Tribal Governments to promote greater awareness and mutual understanding of the policies, activities and concerns of all parties involved, as they relate to NRC and Agreement State regulated facilities;
- serves as the primary contact for policy matters between NRC and these external groups;
- coordinates information exchange to and from the NRC's Regional State Liaison Officers (RSLO's) in support of the activities of the office;
- maintains coordination and communication with the Governor-appointed State Liaison Officers in all 50 States on materials, waste, security and reactor program issues;
- administrates the Advisory Committee on Medical Uses of Isotopes (ACMUI);
- represents NRC in international activities in its area of responsibility in coordination with the Office of International Programs (OIP);
- helps facilitate and coordinate any State participation in such activities;
- coordinates with the Division of Rulemaking in NMSS to provide technical expertise for rulemaking activities pertaining to radioactive materials;
- develops regulatory products (such as guidance documents) to implement rulemaking; and,
- develops and coordinates policy for NRC/ Agreement State Working Groups (e.g., Management Directive 5.3).

Additional information can be found on the NRC's website at www.nrc.gov.

NRC Announces Senior Leadership Changes

In late October 2019, the U.S. Nuclear Regulatory Commission (NRC) announced senior leadership changes in its Rockville, Maryland headquarters Office of the Executive Director for Operations and in the Region III office located in Lisle, Illinois.

The following changes became effective on December 23, 2018:

- Daniel Dorman became the Deputy Executive Director for Reactor and preparedness programs following the retirement of Michael Johnson. Dorman joined the NRC in 1991 as a Project Engineer in the Office of Nuclear Reactor Regulation (NRR), where he served as the Licensing Project Manager for the Vermont Yankee Nuclear Power Plant and the Maine Yankee Nuclear Power Plant. He also served as Chief of the Quality Assurance and Safety Assessment Section, Division of Inspection Program Management in the NRR. Since joining the Senior Executive Service in 2001, Dorman has served in a number of NRC senior management positions of increasing responsibility in the offices of NRR, Nuclear Security and Incident Response (NSIR), and Nuclear Materials and Safety and Safeguards (NMSS). He also served as NRC Region I Regional Administrator. Dorman has been serving as Acting Deputy Executive Director for Materials, Waste, Research, State, Tribal, Compliance, Administration and Human Capital since April 2018. Prior to joining the NRC, Dorman served as a U.S. Navy submarine officer in the nuclear power program. He received a Bachelor's Degree in Naval Architecture and Marine Engineering from the Webb Institute of Naval Architecture and graduated from the NRC SES Candidate Development Program. He received the NRC Meritorious Service Award in 1998 and the Presidential Rank Meritorious Executive Award in 2008.

- K. Steven West became the Deputy Executive Director for Materials, Waste, Research, State, Tribal, Compliance, Administration and Human Capital. West began his career with the NRC in 1985 as an entry-level fire protection engineer in NRR. He has served in positions of increasing scope and responsibility across many NRC programs. He also has served in SES positions in Region III, Region IV, the Office of Federal and State Materials and Environmental Management Programs, the Office of Research and NSIR. In 2017, following a detail as the Acting Director of NSIR, West was selected as the Region III Administrator. West holds a Bachelor of Science degree in Fire Protection Engineering from the University of Maryland. He has received both the NRC Meritorious Service Award for Engineering Excellence and the NRC Distinguished Service Award in 2001.

- Darrell Roberts became the Regional Administrator for Region III, replacing K. Steven West. Roberts joined the NRC in 1989 as a Reactor Engineer Intern in NRR. After graduating from the intern program, he transferred to Region II where he served as a Project Engineer, Resident Inspector and Senior Resident Inspector. In 2002, he returned to NRR, where he served in positions of increasing responsibility, including Technical Chief, Section Chief and Branch Chief. In 2008, he was selected for the SES position of Deputy Director, Division of Reactor Safety (Region I) and later as Director. In 2011, Roberts was appointed to the position of Director, Division of Reactor Projects (Region I). In 2014, he was selected for his current position of Deputy Regional Administrator (Region III) and recently completed a detail as Acting Deputy Director of NSIR. Roberts received a Bachelor's Degree in Mechanical Engineering from

Virginia Tech and a Master's Degree in Technical Management from Johns Hopkins University. He is a graduate of NRC's SES CDP. John (Jack) B. Giessner will replace Roberts as Region III Deputy Regional Administrator.

For additional information, please contact David Castelveter at (301) 415-8200 or Holly Harrington at (301) 415-8200.

NRC Issues Information Notices and Regulatory Issue Summaries

In calendar year 2018, the U.S. Nuclear Regulatory Commission (NRC) released various Regulatory Issue Summary (RIS) and Information Notice (IN) documents.

Regulatory Issue Summaries

NRC released the following RIS documents in calendar year 2018:

- RIS 2018-01, *Common Violations Cited During First 2 Years of 10 CFR Part 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material,"* was issued on January 22, 2018 in order to provide an overview of the requirements of Title 10 of the Code of Federal Regulations (10 CFR) Part 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material," and highlight differences from the security orders issued prior to the promulgation of 10 CFR Part 37; provide an overview of the NRC's staff assessment of the effectiveness of 10 CFR Part 37; inform addressees of common violations that the NRC has identified during inspections conducted to verify compliance with the requirements of 10 CFR Part 37, in order to raise awareness of these particular violations and reduce their occurrence; and, remind addressees of resources available to answer questions and clarify issues regarding rule implementation.

- RIS 2017-01, Revision 1, *Human Reliability and Human Performance Database,* was issued on March 29, 2018 to inform addressees about the NRC's Scenario, Authoring, Characterization and Debriefing Application (SACADA) software for operator simulator training, as well as to announce that the agency is seeking industry partners to voluntarily use SACADA to support the NRC's research in Human Reliability Analysis (HRA) method improvements;

- Errata RIS 2018-01, *Common Violations Cited During First 2 Years of 10 CFR Part 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material," Implementation and Guidance Documents Available to Support Rule Implementation,* was issued on March 1, 2018 to correct an error in the original document that was issued on January 22, 2018—specifically, that the date by which the Agreement States were required to issue compatible requirements for their licensees should have been on or before the "March 19, 2016" deadline, not "March 19, 2014;" and,

- RIS 2018-02, *Preparation and Scheduling of Operator Licensing Examinations,* was issued on March 26, 2018 to inform addressees of the NRC staff's need for updated information on projected site-specific operator licensing examination schedules and on the estimated number of applicants planning to take operator licensing examinations in order to help the NRC plan its resources more effectively.

- RIS 2002-22, Supplement 1, *Clarification on Endorsement of Nuclear Energy Institute Guidance in Designing Digital Upgrades in*

Instrumentation and Control Systems, was issued on May 31, 2018 to clarify that it continues to endorse the Nuclear Energy Institute (NEI) guidance for designing, licensing and implementing digital upgrades and replacements to instrumentation and control (I&C) systems in a consistent and comprehensive manner.

- RIS 2018-03, *National Terrorism Advisory System and Protective Measures for the Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material,* was issued on June 1, 2018 to provide information on the U.S. Department of Homeland Security's (DHS's) National Terrorism Advisory System (NTAS) to licensees who are authorized to possess Category 1 and 2 quantities of radioactive material.

- RIS 2018-04, *Notice of Issuance of Enforcement Guidance Memorandum — Interim Guidance for Dispositioning Apparent Violations of 10 CFR Parts 34, 36 and 39 Requirements Resulting from the Usage of Direct Ion Storage Dosimetry During Licensed Activities,* was issued on September 11, 2018 in regard to the dispositioning of inspection findings related to use of direct ion storage (DIS) dosimetry during NRC-licensed activities.

- RIS 2018-05, *Supplier Oversight Issues Identified During Recent NRC Vendor Inspections,* was issued on October 5, 2018 to inform addressees of the applicable regulatory requirements for procuring basic components for NRC-licensed facilities and for providing oversight of their suppliers, including the implementation by suppliers of quality assurance (QA) programs based on specified standards, as well as to inform the addressees of common violations and non-conformances that the NRC has identified during recent vendor inspections.

- RIS 2018-06, *Clarification of the Requirements for Reactor Pressure Vessel Upper Head Bare Metal Visual Examinations,* was issued on December 10, 2018 to clarify the requirements for bare-metal visual examination, which can be either a visual examination of the bare metal of the upper head or a visual testing (VT)-2 examination under the insulation to meet the requirements of notes 1 and 4 in Table 1 of American Society of Mechanical Engineers (ASME) Code Case N-729-4, "Alternative Examination Requirements for PWR Reactor Vessel Upper Heads with Nozzles Having Pressure-Retaining Partial-Penetration Welds Section XI, Division 1."

The above-referenced RIS documents do not require specific action or written responses on the part of addressees.

Information Notices

NRC released the following IN documents in calendar year 2018:

- IN 2018-01, *Noble Fission Gas Releases During Spent Fuel Cask Loading Operations,* was issued on February 21, 2018 to inform addressees of operating experience related to noble fission gas releases during spent fuel loading operations, as well as of the importance of adequate fuel selection and maintaining fuel qualification test records to demonstrate that either the spent fuel cladding continues to serve its design function or that follow-up actions are needed.

- IN 2018-04, *Operating Experience Regarding Failure of Operators to Trip the Plant when Experiencing Unstable Conditions,* was issued on February 26, 2018 to inform addressees of several reactor events during which operators failed to take timely action to place the plant in a stable condition.

- IN 2018-05, *Long-Term Fissle Material Accumulation Due to Unanalyzed or Improperly Analyzed Conditions at Fuel Cycle Facilities,* to inform addressees of recent operating experience involving unanticipated, long-term accumulation of fissile material in uncontrolled geometry systems due to improper analysis of credible plant conditions.

- IN 2018-06, *Determination of Management Measures for Process Isolation Controls Designated as Items Relied on for Safety and Implementation of Adequate Quality Assurance Measures for Plant Features and Procedures,* to inform addressees of recent operating experience regarding programs and procedures for determining and implementing management measures for isolation controls, which may be required to be available and reliable to perform specific safety functions to prevent or mitigate accident sequences.

- IN 2018-07, *Pump/Turbine Bearing Oil Sight Glass Problems,* was issued on June 13, 2018 to inform addressees of operating experience regarding pump or turbine bearing oil sight glass issues.

- IN 2018-08, *Failure to Enter the Required Technical Specifications Action Statement for Operation During Recent Surveillance Testing While Using a Reactor Protection System Test Bos,* was issued on June 13, 2018 to inform addressees of recent instances where operators of boiling water reactors (BWRs) allowed multiple instrument channels in the reactor protection system (RPS) circuitry to be bypassed without entering the appropriate action statement required by the licensee's technical specifications (TS).

- IN 2018-10, *Thermal Sleeve Flange Wear Leads to Stuck Control Rod at Foreign Nuclear Plant,* was issued on August 29, 2018 to inform addressees about recent operating experience (OE) related to Westinghouse (WEC) nuclear steam supply system plants that have thermal sleeves in the control rod drive mechanism (CRDM) penetration tubes. The available OE demonstrates the potential for these components to experience wear of the thermal sleeve flange from contact against the CRDM penetration tube. The resulting wear can have significant consequences, which were not previously considered for WEC designed pressurized water reactors (PWRs). IN 2018-10 is intended to raise industry awareness regarding this issue for similar designed PWRs. The NRC expects that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems.

- IN 2018-11, *Kobe Steel Quality Assurance Record Falsification,* was issued on September 24, 2018 to alert addressees to a widespread quality assurance (QA) record falsification at Kobe Steel Limited (Kobe Steel) that took place over five decades, from the 1970's until recently.

Additional information can be found on the NRC's website at www.nrc.gov.

NRC Financial Report for FY 2018 Published

On November 15, 2018, the U.S. Nuclear Regulatory Commission (NRC) released its fiscal year 2018 Agency Financial Report, which provides audited financial statements of the agency's management of resources from October 1, 2017 through September 30, 2018.

The report documents continued reductions in the NRC's cost of operations through reduced license fees and fees for services, as well as new efficiencies in its bill paying and collections operations. New information technology for financial management and labor reporting has led to improved data collection, redesigned invoices and improved communications with licensees and others.

Overview

The Agency Financial Report for the NRC provides financial and summary performance information in accordance with Office of Management and Budget Circular A-136, "Financial Reporting Requirements."

This Agency Financial Report is an account of the agency's stewardship of its resources during fiscal year 2018, which covers the period from October 1, 2017 to September 30, 2018. The report is organized into the following three chapters:

- Chapter 1 — Management's Discussion and Analysis: This chapter provides an overview of the NRC financial information and summary-level program performance information. It includes an overview of program performance, current status of systems, internal controls, financial management and the fiscal year 2018 financial statement analysis.

- Chapter 2 — Financial Statements and Auditors' Report: This chapter contains details on the NRC's finances for fiscal year 2018. It includes a message from the Chief Financial Officer, the financial statements and accompanying notes, required supplementary information and the independent auditors' report.

- Chapter 3 — Other Information: This chapter provides the Office of the Inspector General's discussion of management and performance challenges, a summary of the financial statement audit, information on payment integrity and fraud, space occupancy, a glossary of acronyms and other information.

Other Agency Reports

The following additional and related agency reports are also available on the NRC website:

- Agency Financial Reports since fiscal year 2017 at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr2220/.

- The NRC has chosen to produce an Agency Financial Report and an Agency Performance Report. The fiscal year 2018 Agency Performance Report will accompany the NRC's fiscal year 2020 Congressional Budget Justification and will be posted on the NRC's Web site at https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1100/ after publication of the report.

- Performance and Accountability Reports for years before fiscal year 2017 at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1542/.

The Agency Financial Report is available on the NRC web site at https://www.nrc.gov/docs/ML1831/ML18317A204.pdf.

For additional information, please contact David McIntyre of the U.S. Nuclear Regulatory Commission at (301) 415-8200.

Three NRC Officials Receive 2018 Presidential Rank Awards

Three NRC officials were among 139 career public servants selected to receive the FY 2018 Presidential Rank Award. The award is one of the highest given to government employees. It recognizes and celebrates their sustained extraordinary accomplishments.

The NRC recipients include Margaret Doane, previously the agency's General counsel and now its Executive Director for Operations (EDO); Anne Boland, Director of the Office of Enforcement; and, Thomas Rich, a Division Director in the Office of the Chief Information Officer.

"These three senior officials at the NRC have distinguished themselves through consistent and exceptionally high performance in service to this agency and the American people," said NRC Chair Kristine Svinicki. "I join with the entire agency as we honor them and offer our congratulations."

- Doane joined the NRC in 1991 and has held increasingly important leadership roles. She served as Director of the NRC's Office of International Programs and later became the agency's General Counsel. In that role, she served as the Chief Legal Officer for the agency and Principal Legal Advisor to the Chair and the Commission on matters of law and legal policy in support of the NRC's mission. Additionally, she worked closely with other government agencies and the White House to advise and represent the NRC in matters concerning international nuclear safety organizations, committees of Congress, foreign governments and non-governmental organizations. In 2018, she was appointed EDO, the highest career position in the NRC, and serves as the agency's Chief Operating Officer. Her career accomplishments include successfully defending the Continued Storage Rule, which allowed commercial nuclear power plant licensing and license renewal to resume; ensuring that the legal framework existed to support the U.S. and NRC response to the Fukushima nuclear reactor accident; and, providing innovative leadership to the legal team addressing unique issues associated with small modular reactors.

- Boland joined the NRC in 1985 as a Radiation Specialist in the NRC's Region II office in Atlanta. She held progressively more responsible positions in that office and in the agency's Region III office in Lisle, Illinois before moving to the NRC headquarters to serve as a Division Director in the Office of Nuclear Reactor Regulation (NRR) and as Acting Deputy Office Director in the Office of Regulatory Research. Currently, as the Director of the Office of Enforcement, she leads an office of highly skilled scientists and engineers in developing and implementing policies and programs for enforcement, allegations and safety culture programs. Her career accomplishments include leadership in overseeing safety enhancements at an Ohio nuclear plant after significant reactor components were found degraded; leadership of agency-wide efforts to address groundwater contamination issues around power plants; and, the safe resumption of certain cancer treatments at a Department of Veterans Affairs medical center after the identification of significant performance issues.

- Rich began his career with the NRC in 1986 as an Engineering Aid in the Co-Operative Education Program. During his 31 years of service, he has held positions of increasing responsibility in a broad spectrum of technical positions. He performed licensing, inspection and rulemaking activities related to nuclear materials. He also served in a number of supervisory positions, including as lead of the Materials and Waste Applications Team and as Deputy Director in the Information and

Records Services Division. Currently, as Division Director of the Information Technology Services Development and Operations Division, he oversees the technology service lifecycle from design through deployment and maintenance. He manages an annual budget of some $70 million and oversees a technical staff of around 70. His career accomplishments include providing exceptional leadership in developing guidance used by the NRC and Agreement States to review and approve sealed radiation sources and devices for licensing, serving on high-profile inspection teams and providing critical leadership in improving the agency's cyber-security posture and processes.

For additional information, please contact Holly Harrington at (301) 415-8200.

NRC Attorney Receives Prestigious American Bar Association Award

The American Bar Association's Section of Labor and Employment Law have selected Mark Maxin, the NRC's Assistant General Counsel for Administration, as the 2018 recipient of the Federal Labor and Employment Attorney of the Year award. Both the NRC and the Office of Personnel Management nominated Maxin for this award.

This prestigious award honors federal labor and employment attorneys who have made a significant contribution to the field, demonstrated commitment to government service, consistently contributed to the legal profession and sustained excellent work product. Maxin accepted the award in San Francisco in November 2018.

"It is a great honor to work with Mark," said Margaret Doane, NRC Executive Director for Operations. "Mark is a consummate professional and a dedicated public servant. Mark's integrity and commitment to mentoring others sets an example for all NRC employees. I am thrilled that he was selected for this esteemed award."

Maxin has more than 35 years of service in employment law and labor relations. After some two decades with the U.S. Department of Labor (DOL), where he received the Distinguished Career Service Award, he joined the NRC in 2004. He became Assistant General Counsel in 2009 and received the NRC's Meritorious Service Award in 2016 in part for his efforts on behalf of the agency's reasonable accommodations program.

Among his current job responsibilities are advising senior agency officials on employment and labor relations matters as well as on procurement and appropriations issues. In this role, Maxin develops the NRC's attorneys who advise in these matters and conducts training for more than 3,000 staff members. Maxin is also an Adjunct Professor at American University's Key Executive Program and School of Public Affairs.

His significant accomplishments include conducting more than 100 disability law training sessions throughout the federal government; drafting anti-harassment policies for DOL and the NRC; serving as former Chair of the Montgomery County Commission on People with Disabilities and promoting county policies to hire individuals with disabilities; serving in various capacities on two White House-level initiatives related to disability employment; and, representing the agency in labor and employment matters.

For additional information, please contact Holly Harrington at (301) 415-8200.

NRC Scores High Marks in Federal Government Survey

According to a late 2019 press release, the U.S. Nuclear Regulatory Commission (NRC) saw increases in employee engagement and global satisfaction in the annual Federal Employee Viewpoint Survey (FEVS) and remains a top place to work in the federal government.

The FEVS, which is conducted annually by the Office of Personnel Management (OPM), evaluates management leadership, employee satisfaction and organizational culture of federal agencies. The FEVS is an indicator of whether, and to what extent, federal entities have the characteristics typically associated with high-performing, successful organizations.

"We have a wonderful, highly talented staff at the NRC, and we take great pride in creating a positive working environment that brings out the best in our people," said Executive Director for Operations Margaret Doane. "We are pleased that the FEVS results show that our agency continues to be one of the very best places to work in federal service."

The NRC ranked in the top 10 of U.S. government agencies in all major indices measured by OPM including employee engagement, diversity/inclusion (also referred to as the Inclusion Quotient) and global satisfaction. NRC staff provided positive responses to the majority of questions, consistently scoring well above government workplace averages.
The NRC employee engagement score was 77 percent, compared to 68 percent government wide, with the agency ranking 6th overall. The agency's overall "new IQ" score was 71 percent, compared to the government average of 61 percent. The agency score in global satisfaction was 74 percent, compared to a 64 percent government average. Global satisfaction measures employees' satisfaction in their job, organization and pay, as well as willingness to recommend their agency to others as a good place to work.

The NRC consistently has one of the highest response rates amongst agencies. This year 75 percent of NRC employees participated in the survey, 34 percentage points higher than the government average.

For additional information, please contact David Castelveter at (301) 415-8200 or Holly Harrington at (301) 415-8200.

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- DOE Distribution Center ..... (202) 586-9642
- EPA Information Resources Center ..... (202) 260-5922
- GAO Document Room ..... (202) 512-6000
- Government Printing Office (to order entire *Federal Register* notices) ..... (202) 512-1800
- NRC Public Document Room ..... (202) 634-3273
- Legislative Resource Center (to order U.S. House of Representatives documents) ..... (202) 226-5200
- U.S. Senate Document Room ..... (202) 224-7860

by internet

- NRC Reference Library (NRC regulations, technical reports, information digests, and regulatory guides)..... **www.nrc.gov**

- EPA Listserve Network • Contact Lockheed Martin EPA Technical Support at (800) 334-2405 or email (leave subject blank and type help in body of message)..... **listserver@unixmail.rtpnc.epa.gov**

- EPA • (for program information, publications, laws and regulations) ..... **www.epa.gov**

- U.S. Government Printing Office (GPO) (for the Congressional Record, *Federal Register*, congressional bills and other documents, and access to more than 70 government databases)..... **www.access.gpo.gov**

- GAO homepage (access to reports and testimony) ..... **www.gao.gov**

To access a variety of documents through numerous links, visit the website for the LLW Forum, Inc. at www.llwforum.org

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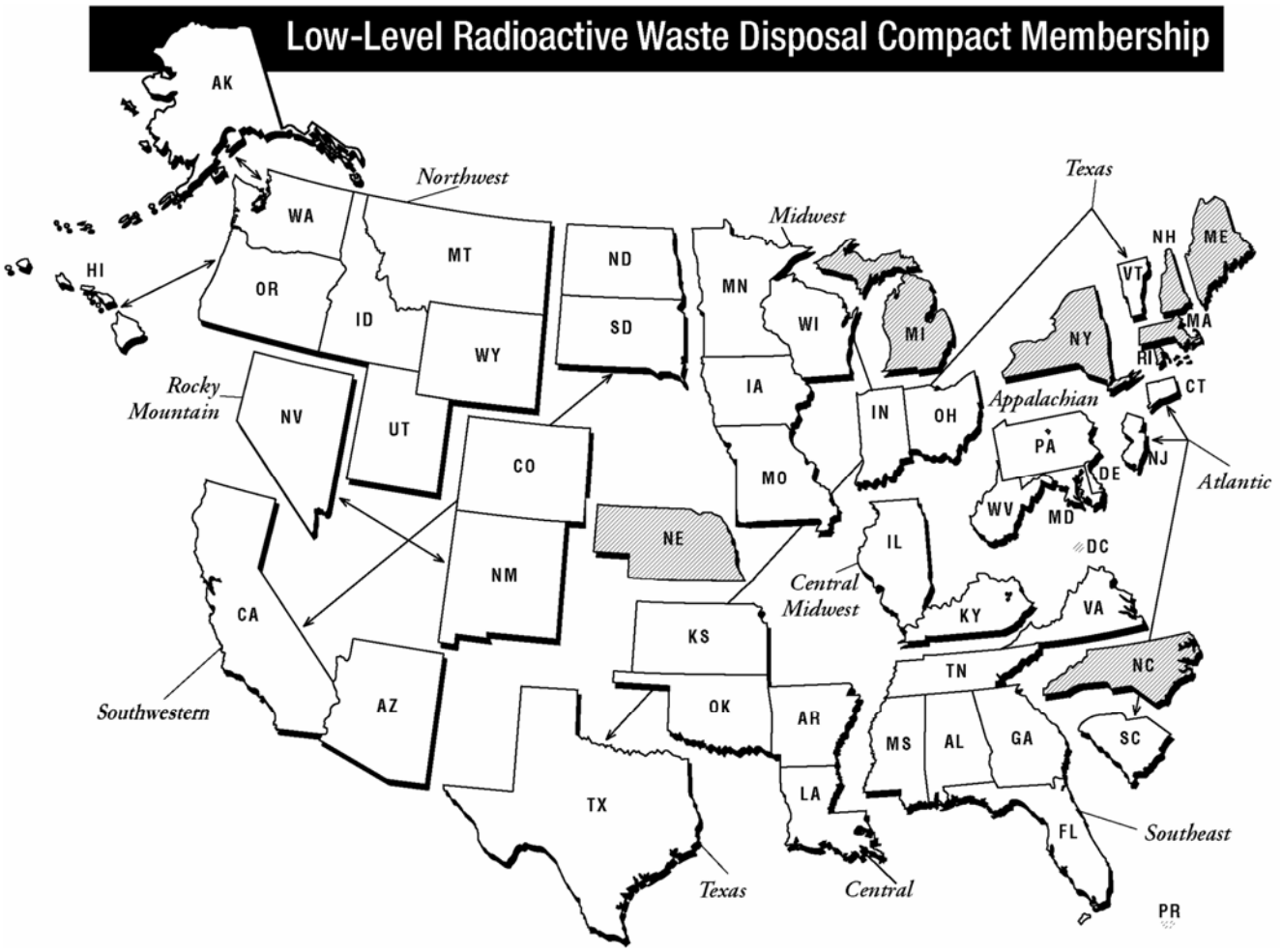

Appalachian Compact
Delaware
Maryland
Pennsylvania
West Virginia

Atlantic Compact
Connecticut
New Jersey
South Carolina

Central Compact
Arkansas
Kansas
Louisiana
Oklahoma

Central Midwest Compact
Illinois
Kentucky

Northwest Compact
Alaska
Hawaii
Idaho
Montana
Oregon
Utah
Washington
Wyoming

Midwest Compact
Indiana
Iowa
Minnesota
Missouri
Ohio
Wisconsin

Rocky Mountain Compact
Colorado
Nevada
New Mexico

Northwest accepts Rocky Mountain waste as agreed between compacts

Southeast Compact
Alabama
Florida
Georgia
Mississippi
Tennessee
Virginia

Southwestern Compact
Arizona
California
North Dakota
South Dakota

Texas Compact
Texas
Vermont

Unaffiliated States
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