

Nuclear Energy

2009 Annual Report of the Public Utility, Communications and Transportation Section

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D. ADMINISTRATIVE ACTIVITY

1. Nuclear Regulatory Commission (NRC) Policy, Practices, and Procedures

a. COL Applications

To date, the NRC has received seventeen COL applications for twenty-six new nuclear units. The NRC has completed its acceptance review for all of the applications, all of which been accepted for docketing. Technical and environmental reviews are underway. Several adjudicatory proceedings involving the proposed new reactors are ongoing.

b. DOE Loan Guarantees

In response to its June 30, 2008, solicitation, DOE announced in October 2008 that seventeen electric power companies submitted nineteen applications for federal loan guarantees to support the construction of fourteen nuclear power plants. The applications reflect the intentions of those companies to build twenty-one new reactors, with some applications covering two reactors at the same site. All five reactor designs that have been certified, or are currently under review for possible certification, by the NRC were represented in the applications. DOE later winnowed the list of applicants to five finalists, none of which have been announced publicly. Secretary of Energy Steven Chu stated that changes in the loan guarantee program should allow the first loan guarantees for new reactors to be awarded by May 2009.

c. Design Certification Rulemaking Process

On January 30, 2009, the NRC staff issued SECY-09-0018 to inform the Commission of its progress on streamlining the design certification rulemaking (DCR) process for new reactor designs. Ten COL applications are currently docketed incorporating designs that have been submitted to the NRC for certification. As a result, the NRC staff is reviewing COL applications in parallel with the NRC's review of the design certification applications. Because the DCR must be completed before the NRC can make a decision on the COL application using that design, a delay in the completion of the COL hearing process could result. The NUCLEAR ENERGY 245 NRC staff has revised the process to shorten the DCR schedule 19.5 months to 12.5 months.

d. Status of License Renewal Applications

To date, the NRC has issued operating license renewals for fifty-one nuclear units. Currently, applications for fourteen units are under review. In accordance with 10 C.F.R. § 2.109, a renewal application must be submitted at least five years before the expiration of the license in order to ensure that the plant can operate uninterrupted during the renewal process.

e. Limited Work Authorizations

The NRC developed interim staff guidance to address the Commission's limited work authorization (LWA) rulemaking, which took effect on November 8, 2007. The major change was the revision of the definition of construction in 10 C.F.R. § 50.10(a) to exclude those activities that have no reasonable nexus to radiological health and safety or common defense and security (e.g., site clearing and grading). The guidance addresses the definition of construction and the delineation of preconstruction activities and those activities requiring prior approval of the NRC.

The definition of construction specifically excludes excavation. Excavation activities, such as the removal of any material below the final ground elevation to the final parent material, may be conducted without NRC approval. Excavation activity, however, does not include the placement of permanent, nonstructural dewatering materials, mudmats, or engineered backfill in anticipation of placing the foundation and associated permanent retaining walls. These are considered to fall within the scope of construction. Construction further includes installation of the foundation; the installation of permanent drainage systems; the placement of backfill, concrete, or other materials that will not be removed before placement of the foundation of a structure; the placement and compaction of a subbase; the installation of reinforcing bars to be incorporated into the foundation of the structure; the erection of concrete forms for the foundations that will remain in place permanently; and the placement of material constituting the foundation of any systems, structures, and components within the scope of the definition of construction.

f. Commission Approves Aircraft Impact Final Rule

On February 17, 2009, the NRC approved a final rule requiring all new nuclear power plant applicants to analyze whether the design features of their facility could avoid or mitigate the impact of a large commercial aircraft. The NRC does not believe reactor operators should be required to prevent an aircraft strike, but the Commission is working with other agencies to provide layered protection against such a threat. The final rule requires applicants to show they have incorporated design features and functional capabilities so that even if an aircraft crashes into a nuclear power plant, the reactor core would remain cooled or the containment structure would remain intact. In addition, applicants must demonstrate that the spent fuel cooling or spent fuel pool integrity would be maintained. The rule was expected to be published by June 2009.

g. Power Reactor Security Rulemaking

On March 27, 2009, the NRC issued a final rule amending its security regulations and adding new security requirements pertaining to nuclear power reactors.²⁰ Key elements of the new rule include safety-security interface requirements that explicitly require licensees to manage potential conflicts between security considerations and other plant activities that could compromise plant security

or safety; enhancements to the normal radiological sabotage-based physical security requirements via the new requirement that mixed-oxide fuel be protected from theft or diversion; cybersecurity requirements designed to ensure that digital systems and networks are adequately protected; a new regulatory framework to facilitate consistent application of NRC requirements for mitigation strategies and response procedures for potential or actual aircraft attacks; strengthening of many elements of the preexisting access authorization program requirements; and training and qualification enhancements. The final rule became effective May 26, 2009. For current 10 C.F.R. pt. 50 licensees, compliance with the final rule is required by March 31, 2010. However, current licensees are required to submit their cybersecurity plans within 180 days of the effective date of the rule.

h. Waste Confidence Decision Update

On October 9, 2008, the NRC published in the Federal Register a proposed rulemaking to revise its generic determination on the environmental impact of spent fuel storage in conjunction with an update to its Waste Confidence Decision. The proposed rule would amend 10 C.F.R. § 51.23(a) to state the NRC's finding that spent fuel can be stored safely, without significantly affecting the environment, until a disposal facility is available. The NRC also proposes revising Findings 2 and 4 of its Waste Confidence Decision. The objectives of Finding 2 were to predict when a repository for spent fuel would be available for use and how long spent fuel would need to be stored on a reactor site pending the opening of the repository. Finding 4 reflects the NRC's confidence that spent fuel can be stored safely for several decades without impacting the environment. Based on its review of spent fuel pools and dry cask storage, post-9/11 security enhancements, and study results, the NRC would like to revise Finding 4 to state that spent fuel can be stored safely for at least sixty years beyond the life of a reactor's license in spent fuel storage basins or dry storage facilities.

2. Enforcement

On January 2, 2006, the NRC staff issued to David Geisen, a former engineer at the Davis-Besse nuclear plant, an order prohibiting him from any involvement in NRC-licensed activities for five years. The NRC staff requested and received a stay of the enforcement proceeding until after the conclusion of the criminal proceeding, as many of the same facts and issues were involved. Geisen was convicted on three criminal counts in federal court in October 2007, sentenced to four months of home confinement with electronic monitoring, three years of probation, 200 hours of community service, and a \$7,500 fine. His former colleague, Andrew Siemaszko, was also convicted on three criminal counts for his involvement in inaccurate reporting to the NRC. In June 2008, Geisen requested that the hearing on the order be reinstated. The Licensing Board held a hearing in the enforcement proceeding from December 8-12, 2008. The Board held additional oral argument on March 3, 2009. To date, the Board has not yet issued its ruling. The NRC's investigation into the security guard lapses at the Peach Bottom facility culminated in a \$65,000 fine levied against Exelon Generation, LLC in January 2009 for a deliberate breach of the agency's security requirements. The NRC determined that select security guards willingly abrogated their responsibility to report observed instances of inattentive behavior. The NRC launched a range of inspections and investigations in September 2007 after video recordings of inattentive security officers came to light. Separately, the NRC initiated a lessons-learned assessment to identify potential improvements in its allegation review processes. The review team developed recommendations for improvements to the allegation

policies and practices and to the inspection program, aimed specifically at enhancing the NRC's ability to identify conditions of inattentiveness. Subsequently, the NRC issued Allegation Guidance Memorandum (AGM) 2008-001, Interim Guidance in Response to Lessons Learned from the Allegation Assessment of Inattentive Security Officers at Peach Bottom Atomic Power Station. The AGM is designed to provide interim guidance to the NRC staff responsible for handling allegations.

Effective September 10, 2008, the Commission approved an extension of the enforcement discretion period on a case-by case basis for licensees making the transition to the risk-informed National Fire Protection Association Standard 805.²¹ The enforcement discretion period was initially extended from two to three years on April 18, 2006. The Commission extended the enforcement discretion period in recognition of the fact that licensees need additional time to procure additional resources and develop fire probability risk assessments.

3. Important NRC Adjudication Developments

a. PG&E—CLI-08-26

The Commission in CLI-08-26 issued an order resolving the Diablo Canyon independent spent fuel storage installation (ISFSI) proceeding on remand from the Ninth Circuit. Following remand, the NRC staff prepared a supplemental environmental assessment (EA) to address the likelihood and potential environmental consequences of a terrorist attack on the ISFSI. The San Luis Obispo Mothers for Peace challenged the EA supplement arguing that it failed to consider the environmental impacts of land contamination and latent health effects. A majority of the Commissioners concluded that the NRC staff properly determined that the environmental impacts of the postulated terrorist attacks were not significant and, therefore, did not warrant preparation of a full-blown environmental impact statement (EIS).

b. Bellefonte—CLI-09-03

In CLI-09-03, the Commission reversed a Licensing Board decision admitting a contention regarding low-level radioactive waste (LLRW). The contention alleged that the applicant failed to offer a viable plan for disposal of LLRW because, as of June 30, 2008, the disposal facility in Barnwell, South Carolina, no longer accepted Class B and Class C LLRW from states outside the Atlantic Compact Commission (Connecticut, New Jersey, and South Carolina). According to the Commission, the Board erred in admitting the proposed contention because the contention constituted a collateral attack upon Table S-3. The Commission also declined to initiate a low-level waste confidence proceeding, reasoning that applicants have been safely managing low-level waste for years. Similar contentions have been admitted in four other proceedings and denied in at least one other.

4. High-Level Waste Storage and Developments

a. Docketing of Application Notice of Hearing; Petitions to Intervene

On September 8, 2008, the NRC accepted for docketing DOE's license application for the proposed high-level nuclear waste repository at Yucca Mountain. The Commission also adopted DOE's EIS, but requested that DOE supplement some aspects of its groundwater analysis. The decision triggered a three-year congressional deadline with a possible one-year extension for the Commission to decide

whether grant a construction authorization. NRC officials have stated that this deadline is contingent on the NRC's receiving sufficient resources from Congress. In response to a notice of opportunity for hearing published in the October 22, 2008, Federal Register, fourteen petitioners seeking to intervene in the proceeding filed approximately 320 proposed contentions. Three NRC Atomic Safety and Licensing Boards conducted oral arguments in the proceeding from March 31 to April 2, 2009. The Boards will issue rulings on the petitioners' standing and the admissibility of the proposed contentions.

b. Final Rule on Dose Standard After 10,000 Years

On March 13, 2009, the Commission published in the Federal Register a final rule on Implementation of a Dose Standard After 10,000 Years.²² The rule incorporates the EPA's site-specific radiation dose standards for a high-level nuclear waste repository at Yucca Mountain, as required by the Energy Policy Act of 1992. The final rule amends 10 C.F.R. pt. 63 to retain EPA's standard dose limit for individuals of fifteen millirem for the first 10,000 years after disposal and adopts EPA's 100 millirem dose limit for the period after 10,000 years and up to one million years. The final rule also follows the EPA by specifying a range of values for the deep percolation rate to be used to represent climate change after 10,000 years. Further, the final rule specifies that calculations of radiation doses for workers will be made using the same weighting factors that EPA is using to calculate individual doses to members of the public. The final rule became effective April 13, 2009.

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Notes

20. Final Rule, Power Reactor Security Requirements, 74 Fed. Reg. 13,926 (Mar.27, 2009).
21. See 73 Fed. Reg. 52,705.
22. See 74 Fed. Reg. 10,811.

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