

Appendix D

Further Discussion of Out-of-Scope Activities

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Various activities that are performed during decommissioning may seem intuitively to be part of the decommissioning process. However, they are not considered within the scope of this Supplement because these activities have already received an environmental review during the promulgation of the U.S. Nuclear Regulatory Commission (NRC) regulations governing such activities. They are reviewed and regulated by the NRC under other regulations. These activities include the following:

- Independent Spent Fuel Storage Installation (ISFSI): construction/maintenance/decommissioning: An ISFSI is a facility designed and constructed for the interim storage of spent nuclear fuel and other radioactive materials associated with spent fuel storage. The ISFSI may be located at the same site as the nuclear power facility or at another location. ISFSIs are used by operating plants that require increased spent fuel storage capacity because their spent fuel pools have reached their capacity and the U.S. Department of Energy (DOE) facility for disposing of spent fuel and high-level nuclear waste is not yet available. Decommissioning facilities may use ISFSIs as an alternative to leaving the fuel in the spent fuel pool while waiting for DOE to take ownership of the spent fuel. Licensees that remove the spent fuel from their pools and place it in an ISFSI can then complete the decommissioning process on the power-generation facilities and subsequently terminate the facility license. In some instances, the license for the nuclear power reactor can be terminated while the ISFSI, which has a separate license and is located on the facility site, would continue to be regulated by the NRC.

An ISFSI can be operated either under the same license that is used for the operating or decommissioning facility (called a "Part 50 license," referring to 10 CFR Part 50), or under a site-specific license (called a "Part 72 license," referring to 10 CFR Part 72). Regulations for the licensing and operation of an ISFSI, including quality assurance and quality control requirements, are found in 10 CFR Part 72. If a licensee chose to operate the ISFSI under a Part 50 license, they could, by way of a license-amendment request, change the ISFSI to a Part 72 license, thus allowing termination of the Part 50 license at the end of the reactor facility decommissioning process.

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The decommissioning of the ISFSI is also handled separately from the decommissioning of the nuclear power facility. The 1988 Generic Environmental Impact Statement (GEIS) (NRC 1988) contained a section on decommissioning of ISFSIs, which is not updated in this Supplement.

- Spent fuel storage and maintenance: The Commission has independently, in a separate proceeding, the “Waste Confidence Proceeding,” made a finding that there is:

reasonable assurance that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation (which may include the term of a revised license) of that reactor at its spent fuel storage basin, or at either onsite or offsite independent spent fuel storage installations. (54 FR 39767)

The Commission has committed to review this finding at least every 10 years. In its most recent review, the Commission concluded that experience and developments since 1990 were not such that a comprehensive review of the Waste Confidence Decision was necessary at that time (64 FR 68005). Accordingly, the Commission reaffirmed its finding of insignificant environmental impacts cited above. This finding is codified in the Commission’s regulations at 10 CFR 51.23(a). The operation of a spent fuel pool or an ISFSI is not uniquely linked to decommissioning. All operating nuclear power facilities have spent fuel pools and some (with the number anticipated to increase) have ISFSIs generally located adjacent or near to the power reactor facility.

- Spent fuel transport and disposal away from the reactor location: The temporary storage or future permanent disposal of spent fuel at a site other than the reactor site is not within the scope of this Supplement. Licensees are prohibited from shipping spent fuel from one reactor’s spent fuel pool to another’s without NRC approval. Amendment of one or both of the facilities’ licenses would be required before fuel transfer.

Transportation of spent fuel and other high-level nuclear wastes is governed by regulations in 10 CFR Part 71, “Packaging and Transportation of Radioactive Material.” Disposal of spent fuel and high-level wastes (HLW) are governed by the Nuclear Waste Policy Act (NWPA) of 1982, as amended, which defined the goals and structure of a program for permanent, deep geologic repositories for the disposal of high-level radioactive waste and non-reprocessed spent fuel. Under this Act, the DOE is responsible for developing permanent disposal capacity for spent fuel and other high-level nuclear wastes. At the present time, the DOE, as directed by Congress, is investigating a site in Yucca Mountain, Nevada, for a possible disposal facility. A high-level waste repository would be built and operated by DOE and licensed by the NRC. Title 10 CFR Part 61 contains rules governing

the licensing to receive and possess source, special nuclear, and by-product material at a geological repository operations area that is sited, constructed, or operated in accordance with the NWPA (1982). However, the Commission proposes to supersede the generic criteria in Part 60 for disposal at a waste repository with specific criteria in a new 10 CFR Part 63 issued on February 22, 1999 (64 FR 8640).

- Low-level waste (LLW) disposal at a licensed LLW site or treatment of LLW at compactor facilities: The disposal of LLW is not within the scope of this Supplement. LLW is defined as any radioactive waste that is not classified as HLW, spent nuclear fuel, transuranic waste,^(a) or uranium or thorium mill tailings. LLW often contains small amounts of radioactivity dispersed in large amounts of material, but may also have activity levels requiring shielding and remote handling. LLW that is generated during decommissioning is usually composed of the following material contaminated with radionuclides: rags, papers, filters, solidified liquids, ion-exchange resins, tools, equipment, discarded protective clothing, dirt, construction rubble, concrete, and piping.

Regulations related to LLW disposal are in 10 CFR Part 61 and 10 CFR Part 20, Subpart K. A final GEIS supporting the regulations in 10 CFR Part 61, was published in 1982 as "Final Generic Environmental Impact Statement for 10 CFR Part 61," NUREG-0945 (NRC 1982). A license for the LLW disposal site is not issued until the applicant provides an environmental report indicating that the applicant's proposed disposal site, design, operations, site closure, and post-closure institutional controls are adequate to protect public health and safety. The licensee for the LLW site must show that there is reasonable assurance that (1) the general population will be protected from releases of radioactivity, (2) that individual inadvertent intruders are protected, (3) that standards for radiation protection in 10 CFR Part 20 are met, and (4) that the long-term stability of the disposed waste and the disposal site will be achieved and will eliminate to the extent practical the need for ongoing active maintenance of the disposal site following closure. The environmental report will be reviewed by the NRC and the impacts of LLW disposal evaluated in an Environmental Impact Statement (EIS) that is written for the specific LLW site. The technical requirements for land-disposal facilities are covered in Subpart D of 10 CFR Part 61. The financial assurance requirements are covered in Subpart E of 10 CFR Part 61.

(a) Transuranic waste contains man-made elements heavier than uranium that decay by emitting alpha particles. Such waste is produced during reactor fuel assembly, weapons fabrication, and chemical processing operations.

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- Activities related to the ENTOMBMENT Period:

On October 16, 2001, the Commission issued an advanced notice of proposed rulemaking (ANPR) inviting input from stakeholders on “Entombment options for Power Reactors” (66 FR 52551). Consistent with the environmental evaluation of the DECON and SAFSTOR decommissioning options the staff has limited its environmental evaluation of ENTOMB to those issues related to activities necessary to prepare the facility for entombment.

Issues and resulting impacts related to the ENTOMB option after the facility begins entombment such as NRC oversight and monitoring requirements, durability of institutional controls and engineered barriers, indefinite retention onsite of radioactive materials, and other long-term site-specific issues are outside the scope of this Supplement.

A future environmental assessment in support of NRC rulemaking related to the entombment options may address these issues depending on the proposed changes to the regulations.

- Activities following license termination under restricted use conditions: Licensees are allowed by regulations in 10 CFR Part 20, Subpart E, “Radiological Criteria for License Termination,” to release the site for restricted use. The impacts following a restricted release license termination will not be considered by this Supplement because the licensee is required to conduct a site-specific analysis to support development of an NRC site-specific EIS.

- Activities and impacts from living or working on the site after license termination: Analysis of radiological impacts from unrestricted use after decommissioning and license termination are presented in NUREG-1496, *Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities* (NRC 1997). This GEIS analyzed regulatory alternatives for establishing radiological criteria for decommissioning structures and lands of licensed facilities. The scope included both radiological and nonradiological impacts on human health and safety, including radiation exposure resulting from occupancy of site buildings and residence on site lands following decommissioning and license termination.

D.1 References

10 CFR 20. Code of Federal Regulations, Title 10, *Energy*, Part 20, “Standards for protection against radiation.”

1 10 CFR 50. Code of Federal Regulations, Title 10, *Energy*, Part 50, “Domestic licensing of
2 production and initialization facilities.”

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4 10 CFR 51. Code of Federal Regulations, Title 10, *Energy*, Part 51, “Environmental protection
5 regulations for domestic licensing and related regulatory functions.”

6
7 10 CFR 61. Code of Federal Regulations, Title 10, *Energy*, Part 61, “Licensing requirements
8 for land disposal of radioactive waste.”

9
10 10 CFR 71. Code of Federal Regulations, Title 10, *Energy*, Part 71, “Packaging and
11 transportation of radioactive material.”

12
13 10 CFR 72. Code of Federal Regulations, Title 10, *Energy*, Part 72, “Licensing requirements
14 for the independent storage of spent nuclear fuel and high-level radioactive waste.”

15
16 54 FR 39767. “10 CFR Part 51 Waste Confidence Decision Review.” *Federal Register*.
17 September 28, 1989.

18
19 64 FR 8640. “10 CFR Parts 2, 19, 20, 21, 30, 40, 51, 60, 61, and 63 Disposal of High-Level
20 Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, Nevada.” *Federal*
21 *Register*. February 22, 1999.

22
23 64 FR 68005. “Waste Confidence Decision Review.” *Federal Register*. December 6, 1999.

24
25 66 FR 52551. “Entombment Options for Power Reactors.” *Federal Register*. October 16,
26 2001.

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28 Nuclear Waste Policy Act of 1982, as amended, 42 USC 10.101 et seq.

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30 U.S. Nuclear Regulatory Commission (NRC). 1982. *Final Generic Environmental Impact*
31 *Statement for 10 CFR Part 61*. NUREG-0945, NRC, Washington, D.C.

32
33 U.S. Nuclear Regulatory Commission (NRC). 1988. *Final Generic Environmental Impact*
34 *Statement for Decommissioning of Nuclear Facilities*. NUREG-0586, NRC, Washington, D.C.

35
36 U.S. Nuclear Regulatory Commission (NRC). 1997. *Final Generic Environmental Impact*
37 *Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-*
38 *Licensed Nuclear Facilities*. NUREG-1496, Vol. 1, NRC, Washington, D.C.