

RECORD OF DECISION

U.S. NUCLEAR REGULATORY COMMISSION

DOCKET NUMBER: 50-237 and 50-249

SUBSEQUENT LICENSE RENEWAL APPLICATION FOR

DRESDEN NUCLEAR POWER STATION UNITS 2 and 3

BACKGROUND

The U.S. Nuclear Regulatory Commission (NRC) received an application dated April 17, 2024 (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML24108A007), from Constellation Energy Generation, LLC (CEG) filed pursuant to Section 103 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.) (AEA); Title 10 of the *Code of Federal Regulations* (10 CFR) Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," and 10 CFR Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," for subsequent renewal of the renewed facility operating license for Dresden Nuclear Power Station, Units 2 and 3 (Dresden).

Dresden is a boiling water reactor located approximately 23 miles southwest of Joliet, Illinois. CEG is authorized to operate the facility at reactor core power levels not in excess of 2,957 megawatts thermal. On May 7, 2024, the NRC staff published a notice of receipt and availability of the subsequent license renewal application (SLRA), including the environmental report (ER), in the *Federal Register* (FR) (89 FRN 38197).

The AEA specifies that licenses for commercial power reactors can be granted for an initial period of up to 40 years. The NRC regulations permit these licenses to be renewed beyond the initial 40-year term for an additional period, limited to 20-year increments per renewal, based on the results of an assessment to determine whether the nuclear facility can continue to operate safely during the proposed period of extended operation. There are no limitations in the AEA or NRC regulations restricting the number of times a license may be renewed.

The current operating licenses of Dresden Unit 2 (DPR-19) and Unit 3 (DPR-25) will expire on December 22, 2029, and January 12, 2031, respectively. If the subsequent license renewal (SLR) is approved, the operating licenses would be extended to December 22, 2049, and January 12, 2051, respectively.

Section 102 of the National Environmental Policy Act of 1969, as amended (NEPA), directs that an environmental impact statement (EIS) be prepared for any major Federal action that has the potential to significantly affect the quality of the human environment. In accordance with 10 CFR 51.20(b)(2), the NRC prepares an EIS for the issuance of a renewed reactor operating license, regardless of the action's environmental impact significance. The NRC's Federal action is to decide whether to issue subsequently renewed operating licenses for Dresden Unit 2 and 3, authorizing operation until December 22, 2049, and January 12, 2051, respectively, as proposed in the application.

On June 24, 2024, the NRC staff published a notice of opportunity to request a hearing (89 FR 52517), and on August 5, 2024, the NRC staff published a notice of intent to prepare an EIS and conduct scoping for the Dresden SLRA (89 FR 63450). In addition, Federal, State, and local agencies, as well as Tribal governments, were notified and asked to provide comments on and to participate in the environmental scoping process and review. On August 20, 2024, the NRC staff held two public webinars to obtain public input on the scope of the NRC's environmental review of the Dresden SLRA ER (ML24108A011). On October 23, 2024, the NRC staff published meeting summaries for both the public webinars (ML24270A167). On February 14, 2025, the NRC staff issued a Scoping Summary Report (ML25007A110).

On May 21, 2025, the NRC staff issued a draft supplemental environmental impact statement (DSEIS) (NUREG-1437, Supplement 17, Second Renewal, Regarding Subsequent License Renewal for Dresden Nuclear Power Station, Units 2 and 3) for public comment, providing the preliminary results of the NRC staff's environmental evaluation of the Dresden SLRA review (ML25132A151). A notice of availability (NOA) of the DSEIS was published in the FR on May 30, 2025 (90 FR 23079). A public comment period began on May 30, 2025, when the U.S. Environmental Protection Agency (EPA) published a NOA (90 FR 23050) of the DSEIS to allow members of the public and agencies an opportunity to comment on the results of the environmental review. The official comment period ended 45 days from the published EPA NOA, which was July 14, 2025.

ENVIRONMENTAL IMPACT STATEMENT

In accordance with 10 CFR 51.95(c), the NRC staff documents its environmental review of each SLRA and publishes it as a plant-specific supplement to NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants" (License Renewal GEIS, or LR GEIS), as revised. The LR GEIS documents the results of the NRC staff's systematic approach to evaluating the incremental environmental effects (impacts) of renewing the operating licenses of commercial nuclear power plants. The LR GEIS¹ provides the technical bases for the NRC staff's environmental impact findings on generic (Category 1) issues for initial and SLR contained in Table B-1, "Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants," in Appendix B, "Environmental Effect of Renewing the Operating License of a Nuclear Power Plant," to Subpart A, "National Environmental Policy Act—Regulations Implementing Section 102(2)," of 10 CFR Part 51. Category 2 issues are to be evaluated by license renewal (LR) and SLR applicants, and by the NRC staff, on a plant-specific basis.

On September 3, 2025, the NRC staff issued its final SEIS, providing its final evaluation of the environmental impacts of Dresden SLR. The notice of issuance was published in the Federal Register (90 FR 44251) on September 12, 2025. On September 12, 2025, the EPA published a NOA of the final SEIS (90 FR 44189).² Appendix A to the final SEIS discusses the comments received during the draft SEIS comment period. After consideration of those comments and its independent review, the NRC staff concluded that the adverse environmental impacts of SLR for Dresden are not so great that preserving the option of SLR for energy planning decision-makers would be unreasonable. This recommendation is based on (1) information provided in the ER, as supplemented, and other documents submitted by CEG, (2) the NRC

¹ The most recent revision of the LR GEIS was issued in August 2024, as NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," Revision 2, Volumes 1–3 (Aug. 2024) ([ML24086A526](#), [ML24086A527](#), and [ML24086A528](#)).

²The EPA notice of availability established a 30-day waiting period, which expired on October 14, 2025.

staff's consultations with Federal, State, local, and Tribal agencies, (3) the NRC staff's independent environmental review, and (4) the NRC staff's consideration of public comments received during the scoping process and on the draft SEIS.

Pursuant to 10 CFR 51.102(b) and 51.103(a)(1) - (5), the NRC staff has prepared this Record of Decision (ROD) to accompany its Federal action on the Dresden SLRA. This ROD incorporates by reference materials contained in the final SEIS, in accordance with 10 CFR 51.103(c).

The SEIS evaluates the potential environmental impacts of the proposed Federal action. The NRC designates these environmental impacts as SMALL, MODERATE, or LARGE.

SMALL: Environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

MODERATE: Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.

LARGE: Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

The NRC staff's recommendation in the final SEIS is that the adverse environmental impacts of SLR for Dresden (i.e., the continued operation of Dresden for a period of 20 years beyond the expiration date of the initial renewed license) are not so great that preserving the option of SLR for energy planning decision-makers would be unreasonable.

DECISION

Pursuant to 10 CFR 54.29, "Standards for issuance of a renewed license," a renewed license may be issued if the Commission finds, in part, that the SLR application satisfies the requirements of 10 CFR Part 54, and any applicable requirements of Subpart A of 10 CFR Part 51 have been satisfied; pursuant to 10 CFR 51.102, this includes the completion of the ROD.

The final SEIS, which is incorporated by reference herein, documents the NRC staff's recommendation that the adverse environmental impacts of SLR for Dresden are not so great that preserving the option of SLR for energy planning decision-makers would be unreasonable, in accordance with 10 CFR 51.103(a)(5). In the 1996 final rule amending 10 CFR Part 51 (61 FR 28467), the Commission explained the following:

Given the uncertainties involved and the lack of control that the NRC has in the choice of energy alternatives in the future, the Commission believes that it is reasonable to exercise its NEPA authority to reject LR applications only when it has determined that the impacts of license renewal sufficiently exceed the impacts of all or almost all of the alternatives that preserving the option of license renewal for future decision-makers would be unreasonable.

In making its licensing decision on the proposed Federal action to authorize the continued operation of Dresden Unit 2 and 3, through to December 22, 2049, and January 12, 2051, respectively, the NRC must make a favorable safety finding. The purpose of the NRC's safety review is to determine whether the applicant has adequately demonstrated that the effects of aging will not adversely affect the intended functions of any systems, structures, and

components specified in 10 CFR 54.4, “Scope,” and 10 CFR 54.21, “Contents of application—technical information.” The applicant must demonstrate that the effects of aging will be adequately managed so that the intended functions will be maintained during the SLR period. The staff documented the results of its safety review in “Safety Evaluation Related to the Subsequent License Renewal of Dresden Nuclear Power” dated September 9, 2025 (ML25251A146). On September 11, 2025, the NRC issued an exemption (ML25205A101) from the requirement in 10 CFR 54.25 that would otherwise require the application for renewal of Facility Operating License Nos. DPR-19 and DPR-25 for Dresden Nuclear Power Station, Units 2 and 3, to be referred to the Advisory Committee on Reactor Safeguards for a review and report, with any report being made part of the record of the application and made available to the public, except to the extent that security classification prevents disclosure.

PURPOSE AND NEED

The purpose and need for the proposed Federal action (issuance of a SLR for Dresden) is to provide an option that allows for power generation capability beyond the term of the current renewed nuclear power plant operating license to meet future system -generating needs. Such needs may be determined by energy planning decision-makers such as State regulators, utility owners, and Federal agencies other than the NRC. This definition of purpose and need reflects the Commission’s recognition that, unless there are findings in the NRC’s safety review (required by the AEA) or findings in the NRC’s environmental analysis (required by NEPA) that would lead the NRC to reject a SLR application, the agency does not have a role in energy planning decisions as to whether a particular nuclear power plant should continue to operate. Ultimately, the appropriate energy planning decision-makers and CEG will decide whether Dresden will continue to operate based on factors such as the need for power or other matters within the State’s jurisdiction or the purview of the owners. The issuance of a subsequent renewed license is one of the requirements that CEG must address to operate its nuclear power plant during the SLR term.

NRC EVALUATION OF THE PROPOSED ACTION AND ALTERNATIVES

In SLR environmental reviews, the NRC considers the environmental consequences of the proposed action (i.e., renewing the operating license), the environmental consequences of the no-action alternative (i.e., not renewing the operating license), and the environmental consequences of reasonable alternatives for replacing the nuclear power plant’s generating capacity. Section 102(2)(C)(iii) of NEPA and the NRC’s regulations require the consideration of alternatives to the proposed action in the EIS. In this case, the proposed action would authorize the applicant to operate Dresden for an additional period of 20 years beyond the expiration date of the current renewed licenses, as requested in the application. Chapter 2 of the SEIS, “Environmental Consequences and Mitigating Actions,” presents the NRC staff’s evaluation and analysis of the environmental impacts of the proposed action and alternatives to SLR. The evaluation considered the environmental impacts of each alternative across the following impact areas: land use and visual resources, air quality and noise, geologic environment, water resources, terrestrial resources, aquatic resources, special status species, historic and cultural resources, socioeconomics, human health, waste management and greenhouse gas emission.

As explained in the discussion of purpose and need for the proposed Federal action, outside of the safety and environmental reviews, the NRC does not have a role in the energy planning decisions as to whether a particular nuclear power plant should continue to operate. Should the renewed operating license not be subsequently renewed, and the nuclear plant shuts down at the end of its current renewed license, the appropriate energy planning decision-makers will

decide how best to replace the nuclear power plant’s generating capacity. In evaluating alternatives to SLR in the EIS, the NRC staff considered energy technologies or options in commercial operation, as well as technologies not currently in commercial operation but likely to be commercially available by the time the current Dresden renewed operating license expires.

For a replacement power alternative to be considered reasonable, it must be both commercially viable on a utility scale and operational before the reactor’s operating license expires or expected to become commercially viable on a utility scale and operational before the expiration of the reactor’s operating license. The current renewed operating license for Dresden expires on December 22, 2049, for Unit 2 and January 12, 2051, for Unit 3 for Dresden. Therefore, to be considered in this evaluation, reasonable alternatives must be available (i.e., constructed, permitted, and connected to the grid) by those dates. To determine whether alternatives were reasonable, or likely to be commercially suitable to replace Dresden, the NRC staff reviewed energy-relevant statutes, regulations, and policies; the state of technologies; and information on energy outlook from sources such as the Energy Information Administration, other organizations within the U.S. Department of Energy, industry sources and publications, and information submitted by CEG in its ER.

Table 1 provides a summary (comparison) of environmental impacts of the proposed action and alternatives. As summarized in Table 1, the two replacement power alternatives have 10 identified environmental impacts that are greater than the impacts from the proposed action of SLR. Based on the review of the replacement power alternatives, the no-action alternative, and the proposed action, the environmentally preferred alternative is the proposed action of SLR.

Table 1: Summary of Environmental Impacts of the Proposed Action and Alternatives

Impact Area (Resource)	DNPS SLR (Proposed Action)	No-Action	Natural Gas	Renewable and Natural Gas Combination
Land Use	SMALL	SMALL	SMALL	LARGE
Visual Resources	SMALL	SMALL	SMALL	SMALL to LARGE
Air Quality	SMALL	SMALL	MODERATE	SMALL to MODERATE
Noise	SMALL	SMALL	SMALL	SMALL to MODERATE
Geologic Environment	SMALL	SMALL	SMALL	SMALL to MODERATE
Water Resources	SMALL	SMALL	SMALL	SMALL
Terrestrial Resources	SMALL	SMALL	SMALL	SMALL to LARGE
Aquatic Resources	SMALL to MODERATE	SMALL	SMALL	SMALL to MODERATE
Federally Protected Ecological Resources	See Note ^(a)	See Note ^(b)	See Note ^(c)	See Note ^(c)
Historic and Cultural Resources	See Note ^(d)	See Note ^(e)	See Note ^(f)	See Note ^(f)
Socioeconomics	SMALL	SMALL to MODERATE	SMALL to LARGE	SMALL to MODERATE
Transportation	SMALL	SMALL	SMALL to LARGE	SMALL to MODERATE
Human Health	SMALL ^(g)	SMALL	SMALL	SMALL
Waste Management	SMALL ^(h)	SMALL ^(h)	SMALL	SMALL

Impact Area (Resource)	DNPS SLR			Renewable and Natural Gas Combination
	(Proposed Action)	No-Action	Natural Gas	
Greenhouse Gas Emissions	SMALL	SMALL	MODERATE	SMALL to MODERATE
<p>(a) Error! Reference source not found. in the EIS presents effects determinations for federally listed species under U.S. Fish and Wildlife Service jurisdiction.</p> <p>(b) Overall, the effects on federally listed species would likely be smaller under the no-action alternative than the effects under continued operation but would depend on the specific shut down activities as well as the listed species present when the no-action alternative is implemented.</p> <p>(c) The types and magnitudes of adverse impacts to species listed in the Endangered Species Act of 1973 (TN1010), as amended (16 U.S.C 1531 et seq.), designated critical habitat, and EFH would depend on the proposed alternative site, facility design and operation, as well as listed species and habitats present when the alternative is implemented. Therefore, the NRC staff cannot forecast a level of impact for this alternative.</p> <p>(d) Based on the presence of historic properties within and near the area of potential effect, Tribal input, CEG administrative procedures, and no planned physical changes or ground-disturbing activities, the proposed action (SLR) would not adversely affect historic properties under Section 106 of the NHPA (TN4157) or historic and cultural resources under NEPA.</p> <p>(e) Until the post-shutdown decommissioning activities report is submitted, the NRC cannot determine whether historic properties would be affected outside the existing industrial site boundary after the nuclear plant is shut down.</p> <p>(f) The impact determination of this alternative would depend on the specific sites at which ground-disturbing activities would occur. Impacts would be assessed, determined, and mitigated with the SHPO and any Tribe that attaches religious and cultural significance to identified historic properties through the Section 106 consultation process.</p> <p>(g) The chronic effects of electromagnetic fields on human health associated with operating nuclear power and other electricity generating plants are uncertain.</p> <hr/> <p>(h) NUREG-2157, <i>Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel</i> (NRC 2014-TN4117), discusses the environmental impacts of spent fuel storage for the time frame beyond the licensed life of the reactor operations.</p>				

CONSIDERATION OF COMMENTS ON THE FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

By letter dated July 2, 2025, the EPA submitted a letter (ML25183A182) on the draft SEIS for Dresden SLR and had no further comments. In addition, EPA had no comments on the final SEIS and issued an email (ML25317A643) dated October 2, 2025.

MITIGATION MEASURES

The NRC has taken all practicable measures within its jurisdiction to avoid or minimize environmental harm from the alternative selected. Continued operation of Dresden would have SMALL environmental impacts in all resource areas, with one exception, impacts to aquatic resources for the Category 2 use titled “Water use conflict with aquatic resources (plants with cooling ponds or cooling towers using makeup water from river),” would be SMALL to MODERATE. The NRC staff concluded that there are no additional mitigation measures warranted. However, Dresden is subject to requirements, including permits, authorizations, and regulatory orders, imposed by other Federal, State, and local agencies governing facility operation. The NRC is not requiring any new environmental monitoring programs outside what is required by Dresden’s current National Pollutant Discharge Elimination System permits and water quality certification or is otherwise required of the licensee under NRC regulations, as described in the Dresden final SEIS.

DETERMINATION

The NRC has determined that the standards for the issuance of a subsequent renewed operating license, with respect to the environmental matters as described in 10 CFR 54.29(b), have been met and that the requirements of Section 102 of NEPA, as prescribed in 10 CFR 51.103, "Record of decision—general," have been satisfied based on: (1) NRC staff's consultation with Federal, State, Tribal, and local government agencies, (2) the NRC staff's independent environmental review, which is documented in the final SEIS, (4) the NRC staff's consideration of mitigation measures, and (4) the NRC staff's consideration of comments received from other agencies, organizations, and the public. The NRC has determined that the adverse environmental impacts of issuing a subsequent renewed operating license for Dresden are not great enough that preserving the option of SLR for energy planning decision-makers would be unreasonable.

Dated at Rockville, Maryland, this 16th day of December 2025.

APPROVED BY:

/RA/

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