



Environmental Assessment and Finding of No Significant Impact for the Exemption Request to Install Support of Excavation Walls Prior to Limited Work Authorization Issuance

Final Environmental Assessment

Docket Numbers: 050-616 and 050-617

Issued: August 2026

1.0 INTRODUCTION

By letter dated December 31, 2025 (PSMR 2025-TN12929), SMR, LLC submitted an application to the U.S. Nuclear Regulatory Commission (NRC, the Commission) on behalf of Palisades SMR, LLC (Palisades SMR), the owner. Palisades SMR is a wholly-owned, indirect subsidiary of Holtec International (Holtec). The application was the first part (Part 1) of a phased construction permit application (CPA), requesting authorization to begin construction of a dual-unit SMR-300 (small modular reactor) nuclear plant—designated as Pioneer Units 1 and 2 (herein referred to as Pioneer units, Pioneer site, or Pioneer SMR project)—within the Palisades Energy Center (PEC) in Van Buren County, Covert, Michigan, adjacent to the existing Palisades Nuclear Plant (PNP) (NRC 2026-TN12912). The application included a request for a limited work authorization (LWA), pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 (TN249), as well as three exemption requests (PSMR 2025-TN12930). The NRC is currently developing an environmental impact statement (EIS) to address the environmental impacts of construction, operation, and decommissioning of the Pioneer units, and expects to publish the draft EIS for public comment in the fall of 2026 (NRC 2026-TN13563).

In Part 1 of the Pioneer Units 1 and 2 phased CPA (NRC 2026-TN12912), SMR requested the NRC issue an exemption from 10 CFR 50.10(c) to allow for construction of support of excavation (SOE) walls, which would remain in place after construction is complete. Palisades SMR requested the NRC issue the requested exemption independently of, and prior to, issuance of the LWA. The proposed exemption would allow Palisades SMR to proceed, prior to issuance of an LWA, if approved, with this limited construction activity. Granting this exemption request would not constitute a commitment by the NRC to issue an LWA or construction permit (CP) for the Pioneer site, and Palisades SMR would perform the excavation support activities assuming the risk that either part of its phased CPA may later be denied. The NRC has prepared this environmental assessment (EA) for the exemption request in accordance with the requirements of 10 CFR 51.21 (TN10253). Based on the analyses in this EA, the NRC has reached a Finding of No Significant Impact (FONSI). The details of the NRC staff's safety review of the exemption request will be provided in the corresponding safety evaluation document.

In May 2025, NRC issued an EA and FONSI for the Palisades Nuclear Plant Reauthorization of Power Operations Project (herein referred to as the 2025 Palisades EA) at the PEC site (NRC 2025-TN11798). The 2025 Palisades EA does not, however, evaluate the environmental impacts of construction, operation, or decommissioning of the Pioneer units; and was relied on by the NRC staff only to the extent that it presents recent evaluation of the current environmental conditions at the PEC site. The NRC staff relied on information contained in the exemption request (PSMR 2025-TN12930), pertinent analyses in Palisade SMR's LWA environmental report (ER) (PSMR 2025-TN12741), relevant information from the NRC staff's 2025 Palisades EA (NRC 2025-TN11798), and information gathered during the environmental audit as the basis for preparing this EA. For this exemption, the NRC staff conducted consultation pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA) (TN4839) independent of the NRC staff's National Environmental Policy Act of 1969, as amended (NEPA) environmental review. By letters dated August 20, 2026, the NRC staff concluded Section 106 consultation and issued a determination that the undertaking would result in No Historic Properties Affected the consulting parties (NRC 2026-TN13662; NRC 2026-TN13663; NRC 2026-TN13664). In accordance with the NRC's Tribal Policy Statement, the NRC staff also notified state tribes (NRC 2026-TN13665). The NRC

staff's Section 106 review and determination is included in this EA, which the NRC staff used to also evaluate the environmental impacts of this exemption on historic and cultural resources and historic properties.

2.0 THE PROPOSED FEDERAL ACTION

The proposed Federal action is NRC approval of Palisades SMR's request for an exemption (PSMR 2025-TN12930) from the NRC's regulations at 10 CFR 50.10(c) (TN249), which would allow construction of SOE walls during SMR-300 excavation and prior to issuance of an LWA, if approved by the NRC. SOE walls are typically removed post-construction; however, in this case, Palisades SMR is requesting to leave the SOE walls as permanent components. Palisades SMR has requested that the NRC consider and approve the exemption independently of, and prior to, completion of the NRC's review of the remainder of Part 1 of the phased CPA, which includes the LWA application and two other exemption requests. Palisades SMR states that it must install SOE walls to keep excavations stable, protect nearby structures and utilities, control groundwater pressures, and ensure worker safety and constructability (PSMR 2025-TN12930).

3.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

Issuance of the exemption would allow Palisades SMR to proceed with SOE wall installation prior to issuance of an LWA, if approved. Issuance of such an exemption shall not be deemed to constitute a commitment to issue a construction permit or an LWA. The SOE wall installation serves no function with respect to structural components of the containment structures (CS), reactor auxiliary building (RAB), or intermediate building (IB) support or radiological health or safety but is needed for construction worker safety during excavation (PSMR 2025-TN12930). If excavation is delayed until after the issuance of the LWA, if approved, activities for the below grade portions of the CS, RAB, IB and portions of select systems, structures, and components (SSCs) could add a significant time delay and construction costs to the Pioneer project. Delaying the construction of the dual Pioneer units could also delay the addition of 680 megawatts (MW) of energy and a reliable lower cost energy supply in the State of Michigan. Palisades SMR anticipates that the cost of any delay of the commercial operation of Pioneer Units 1 and 2 would be substantial (PSMR 2025-TN12930).

4.0 ENVIRONMENTAL ASSESSMENT

4.1 NEPA Review of the Exemption Request

In accordance with 10 CFR 50.12 (TN249), "Specific exemptions," the Commission may, upon application by any interested person or upon its own initiative, grant an exemption from the requirements specified in 10 CFR Part 50 if (1) the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security; and (2) special circumstances are present. The NRC staff performed the acceptance review using the criteria specified in NRC's Office of Nuclear Reactor Regulation Instructions LIC-103 and LIC-109 (NRC 2020-TN10329, NRC 2017-TN10330) to determine whether there is sufficient technical information in scope and depth to allow the NRC staff to initiate its detailed technical safety and environmental reviews. The NRC staff determined that the application provided technical safety and environmental information in sufficient detail to enable the staff to initiate its detailed safety review and to meet the agency's NEPA obligations.

The NRC staff commenced with an environmental audit of the LWA, CP, and exemption requests in May 2026 to more fully define and understand the scope of activities associated with the proposed actions and to discuss new site-specific information relevant to the Pioneer project since the 2025 Palisades EA was completed (NRC 2025-TN11798). The NRC staff considered information collected as part of the 2025 Palisades EA (NRC 2025-TN11798) as well as information provided in the LWA application (NRC 2026-TN12912) when evaluating potential impacts from this exemption request.

The NRC must comply with Section 106 of the NHPA (54 *United States Code* [U.S.C.] § 306108) (TN4839). Section 106 of the NHPA requires Federal agencies to consider the effects of their undertakings on historic properties and provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. This consultation must be completed prior to the issuance of a Federal permit, license, or approval. The NRC conducted its NHPA consultation separately from the NEPA review. Section 5.2 of this EA includes the analysis and results of the NRC staff's NHPA Section 106 review and assessment of impacts to historic and cultural resources considered under NEPA.

4.2 Proposed Activities

Palisades SMR plans to install three different wall designs: diaphragm walls, soldier pile soil mixed walls, and perimeter cutoff walls (Figure 4-1). Tieback anchors would be used, as necessary, to support the differing wall designs (PSMR 2025-TN12930).

- **Diaphragm Walls**—Reinforced concrete diaphragm walls, approximately 36–42 inches (in.) (91.4–106.7 centimeters [cm]) thick and extending about 100 feet (ft) (30.5 meters [m]) below grade, would be constructed around the nuclear island excavation using slurry-supported excavation, steel reinforcement cages with tieback sleeves, and tremie-placed concrete. The walls would remain in place after construction, with the space between the walls and permanent structures backfilled.
- **Soldier Pile Soil Mix Walls**—consisting of overlapping soil-cement columns with embedded wide-flange steel soldier piles, would be installed to a depth of approximately 65 ft (19.8 m) to support the turbine island and portions of the IB excavation. The walls would be constructed using a fixed-mast soil mixing rig and would remain in place after excavation, with the space between the walls and permanent structures backfilled.
- **Perimeter Cutoff Walls**—A continuous perimeter cut-off wall, approximately 36–42 in. (91.4–106.7 cm) thick, 3,875 ft (1,181 m) long, and extending about 65 ft (19.8 m) below grade, would surround the Pioneer units construction area to act as a low-permeability groundwater barrier. The cutoff wall would be constructed using bentonite- and cement-based soil mixtures, with steel reinforcement where needed to provide temporary structural support. The wall would be keyed into the underlying glacial clay to ensure continuity of the low-permeability hydraulic barrier.

To accomplish the proposed action, the reinforced concrete panel diaphragm walls, soldier pile soil mixed walls, and perimeter cutoff walls (all part of the SOE walls) would be installed using traditional construction techniques. Palisades SMR asserts that the SOE walls serve no function with respect to structural SSC support, or radiological health or safety.

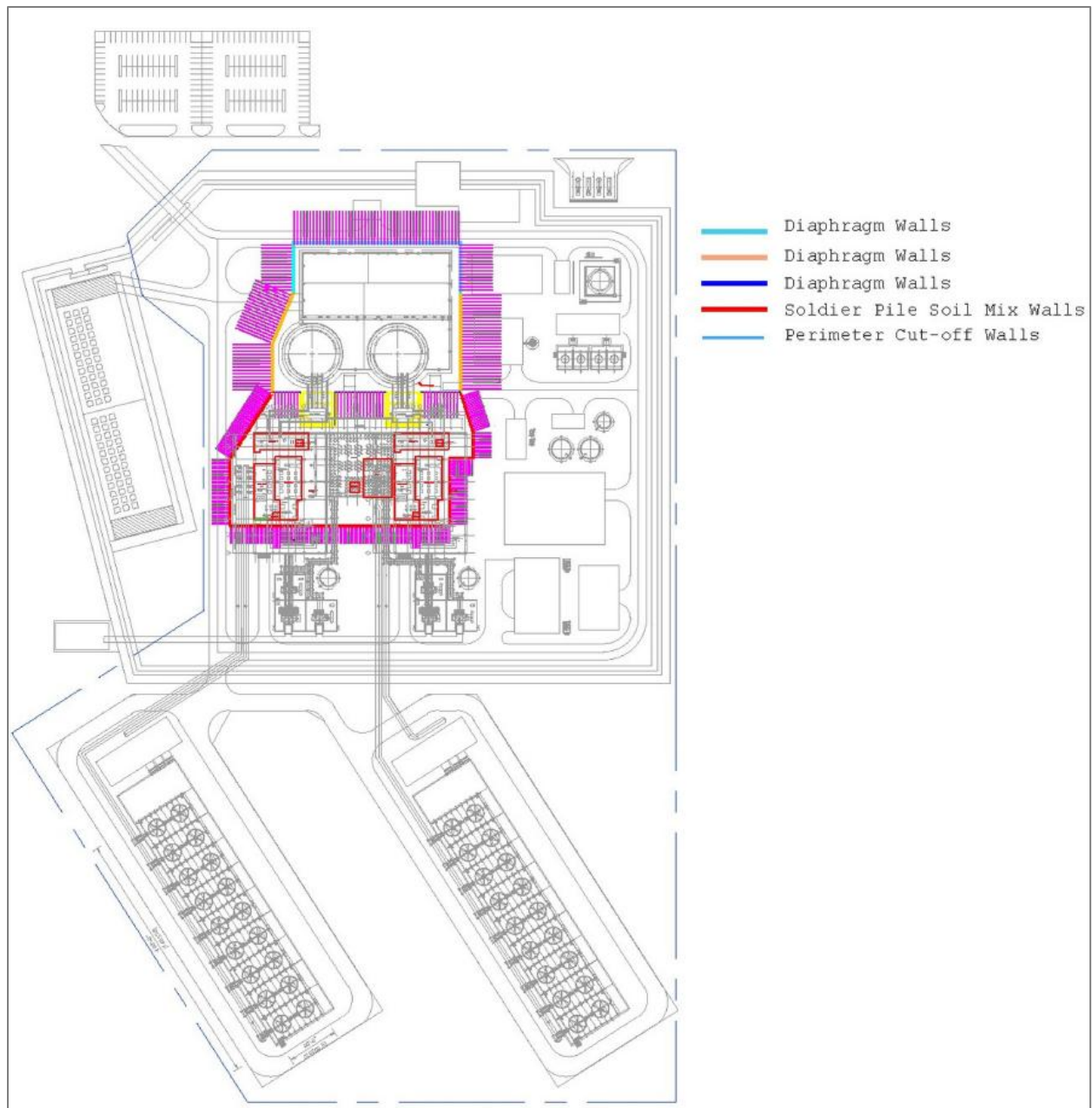


Figure 4-1 Layout of Proposed Support of Excavation Walls for the Pioneer Units 1 and 2 Site. Source: PSMR 2025-TN12930.

4.3 Preconstruction Activities

In a final rule dated October 9, 2007, “Limited Work Authorization for Nuclear Power Plants” (72 *Federal Register* [FR] 57416), the Commission limited the definition of “construction” to those activities within its regulatory purview as defined in 10 CFR 51.4. Many of the activities required to construct a nuclear power plant are not part of the NRC’s regulatory authority. Activities associated with building the plant that are not within the purview of the NRC action are grouped under the term “preconstruction.” Preconstruction activities include clearing and grading, excavating, erecting support buildings and transmission lines, and other associated activities. These preconstruction activities may occur before the application for a CP is submitted, during the review of a CPA, after a CP is granted, or in some cases, concurrently with NRC regulated construction. As shown in Figure 4-2, as of April 2026, the proposed work area contains an existing structure that Palisades SMR plans to remove as a part of preconstruction activities, and the remainder of the proposed exemption work area has been cleared and graded as part of these preconstruction activities. Although preconstruction activities are outside the NRC’s regulatory authority, many of them are within the regulatory authority of other Federal agencies, State, and local agencies. As noted above, the proposed NRC action is approval of an exemption from 10 CFR 50.10(c) to allow for construction of SOE walls, which would remain in place after construction is complete. Because preconstruction activities are not part of the proposed NRC action, their associated impacts are not within the scope of this EA.

4.4 Description of the Proposed Work Area

The proposed work area/Area of Potential Affect (APE) for the SOE walls covers approximately 9 acres (ac) (3.6 hectares [ha]) within the PEC site and encompasses the proposed locations for the Pioneer Units 1 and 2 nuclear island, turbine island, and portions of the intermediate building (Figure 4-2). This area is a subset of the larger area concurrently being evaluated within the scope of the EIS described in Section 1.0 of this EA and is also discussed in the 2025 Palisades Restart EA (NRC 2025-TN11798). The proposed work area is in an industrial, and historically disturbed area where the proposed action and preconstruction activities are being completed. The proposed work area includes existing structures that Palisades SMR plans to remove as a part of preconstruction activities and, as of April 2026, the remainder of the proposed exemption work area has been cleared of vegetation and graded as part of preconstruction activities (see Figure 4-2).



Figure 4-2 Exemption Request Proposed Work Area or the Area of Potential Effect (APE) in Relation to Pioneer Units 1 and 2 Proposed Construction Area and Palisades Energy Center (PEC) Site (April 2026).

5.0 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

The NRC staff has evaluated the potential environmental impacts of the proposed action as well as the no-action alternative to the proposed action and has documented the results of the assessment in this EA. The NRC staff performed this review in accordance with the NEPA (TN661), the NRC's regulations for implementing NEPA (10 CFR Part 51) (TN10253), and applicable guidance.

In Chapter 3 of the 2025 Palisades EA (NRC 2025-TN11798), the NRC staff provided information on the affected environment at the 432 ac (175 ha) PEC site. As previously discussed, the scope of this EA is limited to actions associated with the exemption to allow Palisades SMR to construct SOE walls during SMR-300 excavation and prior to issuance of an LWA, which would remain in place after construction is complete. The evaluation described in this EA is based on Palisades SMR's exemption request (PSMR 2025-TN12930), the 2025 Palisades EA, (NRC 2025-TN11798), information provided in the Pioneer LWA and CPA (NRC 2026-TN12912), Palisades SMR's response to audit information needs, and other information obtained during the audit.

As part of its review under NEPA and 10 CFR Part 51, the NRC staff evaluated the proposed action to identify resource areas that could be affected and the potential for environmental impacts. This evaluation considered the nature, location, and scope of the proposed activities (Section 4.2 of this EA), and site-specific affected environment information from the Palisades SMR ER and the 2025 Palisades EA (PSMR 2025-TN12929; NRC 2025-TN11798). Based on this initial screening, the NRC staff determined that the proposed action (1) would not result in radiological impacts; (2) would not result in significant impacts to land use, terrestrial resources, aquatic resources, threatened and endangered species, air quality, nonradiological health, nonradioactive waste, and socioeconomic conditions; and (3) would require further evaluation in this EA to determine whether potential significant impacts would occur to surface and groundwater, and historical and cultural resources. Table 5-1 summarizes the NRC staff's basis for these determinations.

Table 5-1. Potential for Environmental Impacts from the Proposed Action

Resource Area	Basis for Screening/Rationale	Evaluated Further in EA?
Land Use	The proposed action and associated activities will be within the larger project footprint of the Pioneer Units 1 and 2 construction area in an industrial, cleared, and previously disturbed area (see Figure 4-2). The SOE walls would not require additional land acquisition, conversion to a new land use, or a permanent change in existing land use; therefore, the staff has determined that there would be no significant impacts to land use.	No
Air Quality	The proposed activities would occur in Van Buren County, Michigan, which is designated in attainment for all criteria pollutants (EPA 2026-TN13619 and 40 CFR Part 81-TN7226). Air emissions would result from installation of the SOE walls primarily from operation of construction equipment (combustion exhaust emissions) and earth moving/material handling activities (fugitive dust emissions). Fugitive emissions associated with wall installation would be minimal and combustion exhaust emissions would be intermittent, temporary, and localized. Therefore, the staff has determined that there would be no significant impacts to air quality.	No
Surface Water and Groundwater	Construction of SOE walls during SMR-300 excavation with the walls remaining in place after construction is complete could potentially impact surface water or groundwater resources.	Yes
Terrestrial and Aquatic Resources	The SOE wall installation areas are on a site with existing structures that Palisades SMR plans to remove as a part of preconstruction activities and the remainder of the site was cleared to bare soil and contain no vegetation, trees, or terrestrial wildlife habitat. No vegetation clearing or tree removal would occur as part of the proposed action. No wetlands, streams, ponds, lakes, or other surface waters occur within or immediately adjacent to the work areas, and dewatering would not discharge to surface waters. Therefore, the NRC staff has determined that there would be no significant impacts to terrestrial or aquatic resources.	No
Threatened and Endangered Species	The entire PEC site was evaluated under Section 7 of the ESA (73 FR 76272-TN973) as part of the Palisades restart EA. The staff reviewed the analysis from the Palisades Restart EA and found that the vast majority of the proposed exemption work area had been previously disturbed and lacked suitable habitat	No

Resource Area	Basis for Screening/Rationale	Evaluated Further in EA?
	prior to the initiation of preconstruction activities. Subsequent additional clearing and grading during preconstruction (see Figure 4-2) further reduced the already limited potential for federally listed species or suitable habitat to occur within the area that would be affected by the proposed action. Therefore, the proposed action would have no effect on threatened or endangered species; consequently, consultation under Section 7 of the ESA is not required.	
Historic and Cultural Resources	Proposed activities were analyzed to meet the requirements of an undertaking pursuant to Section 106 of the NHPA. As such, NRC staff conducted consultation with the appropriate parties per 36 CFR 800.2(c). The NRC staff's analysis takes into consideration impacts to historic and cultural resources considered under NEPA and historic properties under NHPA.	Yes
Socioeconomics	The proposed action would occur entirely within the existing project site and would no additional land acquisition, and minimal relocation, changes to public access, changes to traffic patterns, or changes to the local population or employment base. Therefore, the NRC staff has determined that there would be no significant impacts to local socioeconomic conditions.	No
Nonradiological Human Health	The proposed action would not introduce a new source of nonradiological exposure; therefore the NRC staff has determined that there would be no significant impacts to nonradiological human health.	No
Nonradiological Waste Management	The proposed action would not result in the generation of contaminated soil or hazardous nonradioactive waste. Any nonradioactive waste generated during installation would be managed in accordance with existing site waste-management procedures. Therefore, the NRC staff has determined that there would be no significant impacts to nonradiological waste management.	No
Radiological Human Health/Waste Management	The proposed action would have no potential to result in radiological impacts because it does not authorize the receipt of any radiological material. The SOE walls would serve as subsurface excavation support and Palisades SMR states that the SOE walls would have no function with respect to structural SSC support or radiological health or safety. Therefore, the staff has determined that there would be no significant impacts to radiological human health and/or waste management.	No

CFR = *Code of Federal Regulations*; EA = environmental assessment; EIS = environmental impact statement; ESA = Endangered Species Act; NHPA = National Historic Preservation Act; NRC = Nuclear Regulatory Commission; PEC = Palisades Energy Center; SOE = support of excavation; SSC = system, structure, and component.

5.1 Surface and Groundwater Impacts

This section evaluates potential water resources impacts from the proposed action. As described in Section 4.2, the proposed action would allow Palisades SMR to construct SOE walls during SMR-300 excavation and prior to issuance of an LWA, if approved. As described in Section 4.3, the proposed work area covers approximately 9 ac (3.6 ha) within the PEC site and encompasses the nuclear island, the turbine island, and portions of the intermediate building.

As discussed in the exemption request, the Pioneer Units 1 and 2 project area is not located within a flood zone, and there are no significant natural channels, rivers, or streams within or adjacent to the proposed Pioneer Units 1 and 2 project area (PSMR 2025-TN12930). Lake Michigan is the primary surface water receptor in the vicinity of the PEC site. Brandywine Creek is the nearest natural stream reach and is located south of the proposed work area, separated from the site by intervening topography, including sand dunes. Therefore, the proposed action would not involve direct work in surface waters, stream relocation, channel modification, or surface water withdrawals. Construction water demand would be met by municipal supply.

Potential surface water impacts would primarily be associated with stormwater runoff from areas of ground disturbance during SOE wall construction. Ground-disturbing activities could temporarily increase erosion, sediment transport, and the movement of construction-related pollutants in stormwater runoff. Palisades SMR stated that stormwater runoff around areas of ground disturbance would be managed and directed to catch basins or drainage swales (PSMR 2025-TN12930). Palisades SMR would also obtain the necessary permits and implement appropriate construction best management practices before commencing preconstruction activities (PSMR 2025-TN12930). These practices would be monitored and maintained during construction. These practices and associated controls would reduce the potential for sediment or construction-related materials to be transported offsite or to nearby surface water resources, including Lake Michigan.

The cutoff wall would be installed into the low-permeability glacial deposits and thus would isolate the surficial aquifer groundwater enclosed by the cutoff wall from the groundwater in the larger site area. This would reduce the volume of groundwater withdrawal needed to support excavation and construction dewatering and limits the potential environmental impacts of dewatering. The presence of the cutoff wall would alter the local groundwater flow directions but would have no significant effects on groundwater flow across the site area. Groundwater discharge to Lake Michigan would be unaffected and there are no groundwater users that are close enough to be affected by the minor alterations in groundwater flow. Like the cutoff wall, the diaphragm and soldier pile walls supporting the nuclear island and turbine island excavations would also be installed into the low-permeability glacial deposits. Because these walls are inside the cutoff wall, they would have no additional effect on groundwater flows.

Standard engineering methods used for the SOE wall installations are not expected to have any significant effect on groundwater quality. Spill prevention, control, and countermeasures planning are expected to limit any potential groundwater quality impacts from the proposed building activities.

After construction, Palisades SMR plans to abandon in the SOE walls in place and backfill and grade the area (PSMR 2025-TN12930). Stormwater within the facility would be diverted to the site stormwater management system, limiting uncontrolled runoff and infiltration. Because the proposed action would not require work in surface waters, alter

natural channels, or create a surface water withdrawal, long-term direct impacts to surface water resources are expected to be minimal.

No long-term dewatering would occur during operations so post-construction groundwater levels would rise within the SOE walls. The cutoff wall would be breached to allow groundwater flow out of the area enclosed by the wall (PSMR 2025-TN12930). There is no plan to breach the diaphragm and soldier pile walls, which could cause high groundwater levels between these walls and the building foundations. However, groundwater infiltration around the buildings is expected to be limited by the stormwater management system and the prevalence of impermeable surfaces around the buildings. In addition, building foundations are anticipated to be waterproofed to prevent groundwater intrusion (PSMR 2025-TN12741). High groundwater levels around the buildings would increase the vertical hydraulic gradient between the surficial groundwater and the groundwater in the confined sand units. The low permeability of the glacial deposits limits the potential for vertical transport of radionuclides inadvertently released from the plant. However, this potential pathway could be included in operational monitoring of the facility to provide detection and response to any inadvertent releases.

Based on the absence of significant natural surface water features and groundwater users within or adjacent to the proposed Pioneer Units 1 and 2 project area, the lack of direct surface water or groundwater withdrawals or in-water work, the temporary and construction-related nature of potential runoff impacts, the use of permits and construction best management practices, and other factors described previously in this section, the NRC staff concludes that there would be no significant water resources impacts from the proposed action.

5.2 Historic and Cultural Resources Impacts

This section describes the cultural background and the historic and cultural resources at the PEC site and its surrounding area. NEPA (42 U.S.C. 4321 et seq.) (TN661) requires Federal agencies to consider the potential effects of their actions on the affected human environment, which includes aesthetic, historic, and cultural resources as these terms are commonly understood, including such resources as sacred sites. Section 106 of the NHPA (54 U.S.C. § 306108) (TN4839), requires Federal agencies to consider the effects of their undertakings on historic properties. While NHPA emphasizes impacts on historic properties, for NEPA compliance, impacts on cultural resources that are not eligible for or listed in the National Register of Historic Places (NRHP) would also need to be considered.

Historic and cultural resources describe material culture left behind from past human activity. These resources include sites, objects, landscapes, structures, or other natural features of significance to groups of people who have traditional association with it. Historic properties are defined as resources eligible for listing in the NRHP. The NRHP is the nation's official list recognizing buildings, structures, objects, sites, and districts of national, State, or local historical significance which merit preservation. The criteria for eligibility are listed in the 36 CFR 60.4 (TN1682) and include (a) association with significant events in history; (b) association with the lives of persons significant in the past; (c) embodiment of distinctive characteristics of type, period, or construction; and (d) sites or places that have yielded, or are likely to yield, important information.

The proposed action is NRC's consideration of Palisades SMR's exemption request and issuance of an exemption request from the requirements specified in 10 CFR 50.10(c) (TN249). The exemption would allow the construction and permanent retention of the SOE walls during the excavation for the dual-unit SMR-300 plant, Pioneer Units 1 and 2, prior to

issuance of an LWA, if approved by the NRC. SOE walls are typically removed post-construction; however, in this case, Palisades SMR is requesting to leave the SOE walls as permanent components. Palisades SMR has requested that the NRC consider and approve the exemption independently of, and prior to, completion of the NRC's review of the remainder of Part 1 of the phased CPA, which includes the LWA application and two other exemption requests. The SOE walls are designed to support select SSCs, support excavation personnel safety, maintain excavation stability, protect adjacent structures and utilities, and manage groundwater pressures (PSMR 2025-TN12930).

The area of potential effects (APE) for the proposed action (i.e., undertaking) is approximately 9 ac (3.6 ha) within the 432 ac (175 ha) PEC site (Figure 4-2 and Figure 5-1). The NRC's analysis includes a 1 mile (mi) (1.6 kilometers [km]) buffer to account for potential offsite impacts to historic properties, if present. The section below focuses on the scope of the exemption request, cultural background, and a discussion of previously recorded sites and surveys within the APE and 1 mi (1.6 km) buffer.

Cultural Background

This section documents the precontact and historic chronology of the proposed action's region. Detailed cultural backgrounds may be viewed in the archaeological reports written for Pioneer project (Mahoney and Kent 2024-TN10846; Mahoney and Bowers 2025-TN12918). Both reports describe the long-term cultural history and chronology for this portion of the Great Lakes and southwest Michigan. The following sections provide a brief overview of each time period.

The Paleoindian period (13,000 to 10,000 years before present [BP]) represents the earliest documented human occupation of the region following the retreat of the Laurentide Ice Sheet. Small, highly mobile bands of hunter-gatherers occupied short-term camps and exploited a variety of resources, including mammoth, mastodon, bison, and other large game. Diagnostic artifacts include fluted projectile points, such as Clovis and Gainey types, along with bifacial knives, scrapers, drills, and other chipped stone tools manufactured from high-quality chert. Archaeological evidence indicates that many sites are associated with glacial landforms, former lakeshores, and stream terraces. In southwest Michigan, the Belson site in St. Joseph County preserves one of the earliest known Paleoindian occupations in the State, dating to approximately 13,000 years ago (Talbot et al. 2021-TN12917; Nash et al. 2024-TN12945).

The Archaic Period (10,000–2,500 years ago) marked a gradual adaptation to warmer Holocene environments following the extinction of Pleistocene megafauna. Populations broadened their subsistence strategies to include deer, elk, fish, shellfish, waterfowl, nuts, seeds, and other wild plant resources while settlement patterns evolved from highly mobile seasonal camps during the Early Archaic to increasingly permanent occupations along rivers, wetlands, and other resource-rich environments during the Late Archaic (Anderson and Sassaman 2012-TN10494). Technological innovations included the widespread use of the atlatl, ground stone woodworking tools, grinding implements for plant processing, and increasingly diverse chipped stone tool assemblages (Bense 1994-TN10495; USACE 2007-TN11021). During the Late Archaic, long-distance exchange networks expanded throughout the Midwest, facilitating the movement of copper, marine shell, hematite, and high-quality lithic materials between regions (Wiant and Berkson 2000-TN11068). Regional cultural traditions also emerged, including the Red Ochre culture, recognized by distinctive burial practices and ceremonial artifacts throughout the Great Lakes region (Ritzenthaler and Quimby 1962-TN11085; Wiant and Berkson 2000-TN11068).

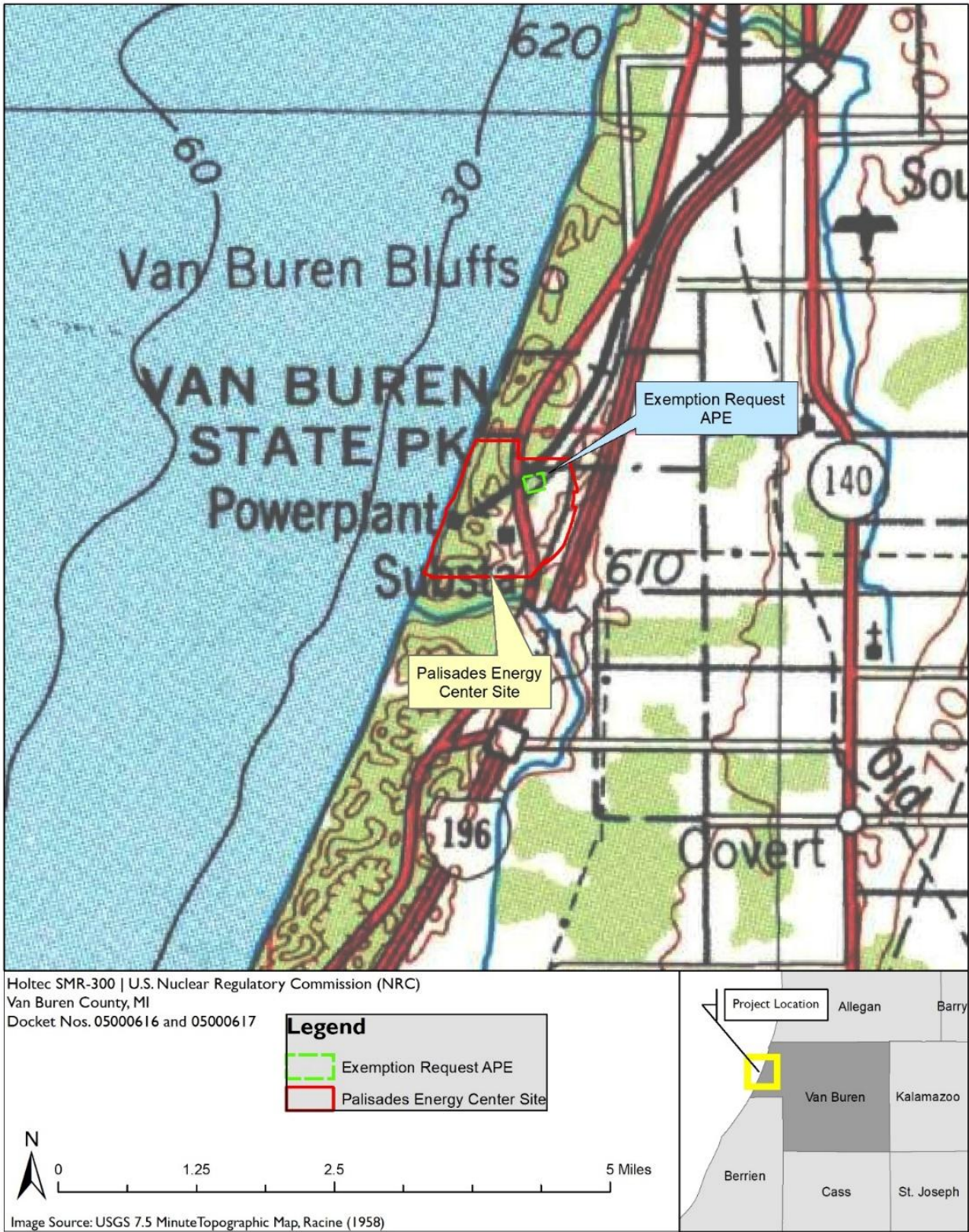


Figure 5-1 Topographic Map Showing the Exemption Request Area of Potential Effects for the Proposed Pioneer Units 1 and 2 Site.

The Woodland Period (2500 BP–AD 1000) is characterized by increasingly sedentary settlements, widespread pottery production, intensified cultivation of native seed crops and later maize, and the development of ceremonial earthworks and burial mounds. Early Woodland populations continued hunting and gathering while adopting ceramic technology and horticulture. During the Middle Woodland, participation in the Hopewell Interaction Sphere connected communities across eastern North America through extensive exchange networks and shared ceremonial practices, including the construction of burial mounds and earthworks (Anderson and Sassaman 2012-TN10494; NPS 2021-TN9875). In southwest Michigan, the Goodall tradition represents a regional expression of the Havana-Hopewell tradition (Yerkes 1988-TN11088; Chivis 2020-TN12985). During the Late Woodland, populations became organized into dispersed villages, maize agriculture increased in importance, ceramic technology diversified, and the bow and arrow replaced the atlatl as the dominant hunting technology (Bense 1994-TN10495; Peskin 2011-TN9872; Walthall 1980-TN10498). The Moccasin Bluff site in Berrien County illustrates long-term occupation spanning the Late Archaic through the Woodland period and preserves evidence of regional ceramic traditions, domestic activities, and village settlement.

The Mississippian Period (AD 900–1600s) is characterized by intensive maize agriculture, permanent villages, hereditary leadership, and increasingly complex political and religious organization. Large settlements were centered on plazas surrounded by platform mounds that served ceremonial, political, and administrative functions. The largest and most influential Mississippian center was Cahokia in southwestern Illinois, which reached its peak around AD 1100 and exerted political, economic, and religious influence throughout much of the Midwest (Anderson 1994-TN10499; Anderson and Sassaman 2012-TN10494; Cahokia Mounds 2025-TN11089). Cahokia's influence extended into southwest Michigan and is reflected in the Oneota tradition, which emerged during the 21st century. Oneota communities combined intensive maize agriculture with hunting, fishing, and gathering and are distinguished archaeologically by shell-tempered pottery, globular ceramic vessels, oval wigwams and longhouses, and distinctive iconography (Esarey 2000-TN11082; Emerson and Brown 1992-TN11719; Theler and Boszhardt 2006-TN12916).

European contact during the 16th century introduced trade but also disease and increasing pressure on Indian Tribal lands. Beginning in the early 19th century, the United States negotiated a series of treaties that ceded much of present-day Michigan. The project area lies within Cession 117, established under the 1821 Treaty of Chicago, through which the Three Fires Confederacy, consisting of the Potawatomi (Bodéwadmi), Odawa (Ottawa), and Ojibwe (Chippewa) Tribes, ceded approximately 4 million ac (1618742 ha) in southwestern Michigan while retaining treaty-reserved hunting and fishing rights, monetary compensation, trade goods, and several reservations, including those for the Match-E-Be-Nash-She-Wish Band of Pottawatomis and the Nottawaseppi Huron Band of the Potawatomi (Michiganology 2026-TN12963). Following passage of the Indian Removal Act of 1830, many Potawatomi were forcibly removed west of the Mississippi River during the Trail of Death, while additional land cessions in southwestern Michigan were completed through the Treaty of St. Joseph (1827/1829) and the 1833 Treaty of Chicago (PBP 2026-TN12964; Kappler 1904-TN12961). Despite these removals, many Indian Tribal communities remained connected to their ancestral homelands.

Today, 36 federally recognized Tribes maintain ancestral ties to lands ceded under the 1821 Treaty of Chicago. Tribes with contemporary connections to the project area include the Pokagon Band of Potawatomi Indians and the Nottawaseppi Huron Band of the Potawatomi. These and other affiliated Tribes continue to maintain cultural and spiritual

connections to their traditional homelands through traditional cultural properties, sacred sites, and the exercise of their treaty-reserved rights.

Historic and Cultural Resources at the PEC Site

In Michigan, the Michigan State Historic Preservation Office (Michigan SHPO) is responsible for administering Federal and State-mandated historic preservation programs to evaluate, protect, and promote Michigan's historic built environment and archaeological sites. The Historic Preservation Division maintains the Cultural Resource Information System (CRIS) electronic database, the State's inventory of historic buildings, structures, sites, objects, and districts. A literature review was conducted using a 1 mi (1.6 km) buffer to understand the historic and cultural resources within the region that could be potentially affected by the proposed undertaking. To this date, no traditional cultural properties are known to be within the project area.

Previously Recorded Sites and Surveys within the APE and One Mile Buffer

The review identified five previously recorded archaeological sites and six prior surveys within the 1 mi (1.6 km) buffer. Of the five recorded sites, four are precontact resources, consisting of lithic scatters and a village site, and one is a historic-period homestead (MI SHPO 2026-TN13017). Only one of the six previously conducted archaeological surveys overlaps the APE. In 2024, SEARCH, Inc. (SEARCH) completed an archaeological survey of the 432 ac (175 ha) PEC in support of the NRC's review for the Pioneer Units 1 and 2 project (NRC 2025-TN11798). The survey identified three archaeological sites, including two precontact lithic scatters and one historic site containing the remnants of an early- to mid-21st century structure (Mahoney and Kent 2024-TN10846). All three sites were recommended not eligible for listing in the NRHP. None are located within the 9 ac (3.6 ha) APE.

Four of the six previous cultural resources investigations within 1 mi (1.6 km) of the APE were also conducted by SEARCH. SEARCH completed an architectural survey of the PNP in 2024, documenting 18 structures and the overall Palisades complex (Theriot and Travisano 2024-TN10847). None of the inventoried resources were recommended eligible for listing in the NRHP. In 2025, SEARCH conducted additional archaeological and architectural surveys of a 55 ac (22 ha) parcel to be used as a construction laydown yard for the Pioneer Units 1 and 2 project. No archaeological sites were identified during the archaeological survey (Mahoney and Bowers 2025-TN12918); however, the architectural survey documented two historic-age resources: a single-story commercial building constructed circa 1968 and a second single-story building constructed before 1980. Both were recommended not eligible for listing in the NRHP (Robinson 2025-TN12919). The Michigan SHPO concurred with the recommendations on June 30, 2025 (MI SHPO 2025-TN13553). Additional archaeological investigations within 1 mi (1.6 km) of the APE include an archaeological survey of eight potential power plant locations conducted by Weir et al. (Weir et al. 1980-TN12934) and a Phase I archaeological survey of approximately 10 ac (4 ha) for the South Haven/Covert Generating Company project completed by Great Lakes Research, Inc. (Branstner 2000-TN12936).

Conclusion and Determination

SEARCH's 2024 and 2025 archaeological and architectural surveys concluded that historic properties are not present within the approximately 9 ac (3.6 ha) APE or the broader

432 ac (175 ha) PEC site. Holtec maintains fleet-wide environmental procedures that address the inadvertent discovery of cultural resources and human remains (HDI 2024-TN10843). Their Cultural Resources Protection Plan outlines required management practices including stop work and notification protocols in the event of an inadvertent discovery during ground-disturbing activities. Given these findings and Holtec's established procedures, the installation and permanent retention of the SOE walls after construction would not affect historic properties in the area. The NRC staff has determined that the undertaking would result in No Historic Properties Affected, as defined in 36 CFR 800.4(d)(1) (TN513). Additionally, the NRC has determined that the impacts to historic and cultural resources associated with the exemption request would not be significant under NEPA.

Initiation and Conclusion of Section 106 Consultation

The NRC notified the ACHP (NRC 2026-TN13560) and initiated the NHPA Section 106 consultation by letter dated July 15, 2026, with the Michigan SHPO (NRC 2026-TN13559) and 31 federally recognized Tribes, including the (1) Bad River Band of the Lake Superior Tribe of Chippewa Indians (Wisconsin), (2) Bay Mills Indian Community, (3) Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe, (4) Chippewa Cree Indians of the Rocky Boy's Reservation of Montana, (5) Citizen Potawatomi Nation, (6) Fond du Lac Band of Lake Superior Chippewa, (7) Forest County Potawatomi Community, (8) Grand Portage Band of Lake Superior Chippewa, (9) Grand Traverse Band of Ottawa and Chippewa Indians, (10) Hannahville Indian Community, (11) Lac Courte Oreilles Band of Lake Superior Chippewa, (12) Lac du Flambeau Band of Lake Superior Chippewa Indians, (13) Lac Vieux Desert Band of Lake Superior Chippewa Indians, (14) Leech Lake Band of Ojibwe, (15) Little River Band of Ottawa Indians, (16) Little Traverse Bay Bands of Odawa Indians, (17) Match-e-be-nash-she-wish Band of Pottawatomis, (18) Menominee Indian Tribe of Wisconsin, (19) Miami Tribe of Oklahoma, (20) Mille Lacs Band of Ojibwe, (21) Ottawa Tribe of Oklahoma, (22) Pokagon Band of Potawatomi Indians, (23) Prairie Band Potawatomi Nation, (24) Prairie Island Indian Community, (25) Red Cliff Band of Lake Superior Chippewa Indians, (26) Red Lake Band of Chippewa Indians, (27) Saginaw Chippewa Indian Tribe of Michigan, (28) Saint Croix Chippewa Indians of Wisconsin, (29) Sault Ste. Marie Tribe of Chippewa Indians, (30) Turtle Mountain Band of Chippewa Indians, (31) and the White Earth Band of Minnesota Chippewa Tribe (NRC 2026-TN13562). In accordance with the NRC's January 9, 2017, Tribal Policy Statement (82 FR 2402-TN5500), the NRC staff notified 3 State-recognized Tribes, including the (1) Burt Lake Band, (2) the Grand River Bands of Ottawa Indians, and the (3) Mackinac Bands of Chippewa and Ottawa Indians and invited them to provide comments (NRC 2026-TN13561). The letters also included the NRC staff's preliminary determination that the undertaking would result in No Historic Properties Affected, as defined in 36 CFR 800.4(d)(1). This determination is distinct from the NRC's NHPA consultation that was initiated June 25, 2026, for the phased CP undertaking.

On August 13, 2026, the Michigan SHPO concurred with the determination of NRC that no historic properties are affected within the area of potential effects for this undertaking (MI SHPO 2026-TN13650). No comments were received from consulting Tribes. On August 20, 2026, the NRC staff notified the consulting parties and state recognized tribes that the NRC determined that the undertaking would result in No Historic Properties affected and concluded consultation (NRC 2026-TN13662; NRC 2026-TN13663; NRC 2026-TN13664; NRC 2026-TN13665).

5.3 Summary

The NRC staff evaluated the environmental impacts from the proposed action which would allow Palisades SMR to construct and leave in place SOE walls during initial excavation for the SMR-300 plant. The NRC staff considered information collected as part of the 2025 Palisades EA (NRC 2025-TN11798), information provided in the LWA application (NRC 2026-TN12912), and information obtained during the audit for the LWA and CPA. The NRC staff determined that the impacts from the exemption related activities would not be significant. Additionally, pursuant to Section 106 of the NHPA, the NRC staff determined that the proposed action would result in No Historic Properties Affected, as defined in 36 CFR 800.4(d)(1) (NRC 2026-TN13662; NRC 2026-TN13663; NRC 2026-TN13664; NRC 2026-TN13665). No objections were received.

6.0 ALTERNATIVES TO THE PROPOSED ACTION

As an alternative to the proposed action, the NRC considered denial of the exemption request (i.e., the “no-action” alternative). If NRC were to deny the exemption request, Palisades SMR would not be allowed to construct and leave in place SOE walls during initial excavation for the SMR-300 plant before the LWA is issued and would need to wait until a decision is made on the LWA or CPA. Denial of the exemption request would avoid the environmental impacts discussed in this EA, unless the NRC grants Palisade SMR’s request for an LWA in Part 1 of the phased CPA, in which case the impacts would then be delayed and incurred when LWA activities commence. A denial and subsequent delay of the excavation-related activities of the Pioneer units could add a significant time delay and construction costs to the Pioneer project, including a delay in the addition of 680 MW of clean energy and a reliable lower cost energy supply in the State of Michigan (PSMR 2025-TN12930). Accordingly, the NRC staff determined that there are no alternatives that meet the need for the proposed action and that are environmentally preferable to the proposed action.

7.0 FINDING OF NO SIGNIFICANT IMPACT

The proposed action before the NRC is whether to issue the exemption authorizing the construction of permanent SOE walls during excavation activities and prior to issuance of an LWA. As required by 10 CFR 51.21, the NRC prepared an EA. This FONSI incorporates by reference the EA in Sections 1.0 through 6.0 of this document. Based on the analysis presented in the EA, the NRC staff has determined that the proposed action will not have a significant impact on the quality of the human environment. Accordingly, the NRC staff has determined that the preparation of an EIS is not required for the proposed Federal action and that a FONSI is warranted.

This finding and the related environmental documents referenced throughout the EA are available for public review as discussed in the EA (see Section 8.0).

8.0 REFERENCES

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10 CFR Part 51. *Code of Federal Regulations*, Title 10, *Energy*, Part 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions.” TN10253.

36 CFR Part 60. *Code of Federal Regulations*, Title 36, *Parks, Forests, and Public Property*, Part 60, “National Register of Historic Places.” TN1682.

36 CFR Part 800. *Code of Federal Regulations*, Title 36, *Parks, Forests, and Public Property*, Part 800, “Protection of Historic Properties.” TN513.

40 CFR Part 204. *Code of Federal Regulations*, Title 40, *Protection of Environment*, Part 204, “Noise Emission Standards for Construction Equipment.” TN653.

40 CFR Part 1501. *Code of Federal Regulations*, Title 40, *Protection of Environment*, Part 1501, “NEPA and Agency Planning.” TN4876.

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