UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 3, 2016

Vice President, Operations
Entergy Nuclear Operations, Inc.
Palisades Nuclear Plant
27780 Blue Star Memorial Highway
Covert, MI 49043-9530

SUBJECT: NUCLEAR REGULATORY COMMISSION REPORT FOR THE AUDIT OF ENTERGY NUCLEAR OPERATIONS, INC'S. FLOOD HAZARD REEVALUATION REPORT SUBMITTAL RELATING TO THE NEAR-TERM TASK FORCE RECOMMENDATION 2.1-FLOODING FOR PALISADES NUCLEAR PLANT (CAC NO. MF6128)

Dear Sir or Madam:

By letter dated June 1, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15146A293), the U.S. Nuclear Regulatory Commission (NRC) informed you of the staff's plan to conduct a regulatory audit of Entergy Nuclear Operations, Inc.'s (the licensee's) Flood Hazard Reevaluation Report (FHRR) submittal related to the Near-Term Task Force Recommendation 2.1-Flooding for Palisades Nuclear Plant. The audit was intended to support the NRC staff review of the licensee's FHRR and the subsequent issuance of a staff assessment.

The audit, conducted on November 9, 2015, was performed consistent with NRC Office of Nuclear Reactor Regulation Office Instruction LIC-111, "Regulatory Audits," dated December 29, 2008 (ADAMS Accession No. ML082900195). The purpose of this letter is to provide you with the final audit report which summarizes and documents the NRC's regulatory audit of the licensee's FHRR submittal.

If you have any questions, please contact me at (301) 415-2621 or by e-mail at Robert.Bernardo@nrc.gov.

Sincerely,

Robert Bernardo, Project Manager
Office of Nuclear Reactor Regulation
Japan Lessons-Learned Division
Hazards Management Branch

Docket No. 50-255

Enclosure:
Audit Report

cc w/encl: Distribution via Listserv

UNITED STATES
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NUCLEAR REGULATORY COMMISSION REPORT FOR THE AUDIT OF ENTERGY NUCLEAR OPERATIONS, INC'S. FLOOD HAZARD REEVALUATION REPORT SUBMITTALS RELATING TO THE NEAR-TERM TASK FORCE RECOMMENDATION 2.1-FLOODING FOR PALISADES NUCLEAR PLANT

BACKGROUND AND AUDIT BASIS

By letter dated March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued a request for information to all power reactor licensees and holders of construction permits in active or deferred status, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(f), "Conditions of license" (hereafter referred to as the "50.54(f) letter"). The request was issued in connection with implementing lessons-learned from the 2011 accident at the Fukushima Dai-ichi nuclear power plant, as documented in the Near-Term Task Force's review of insights from the Fukushima Dai-ichi accident. Recommendation 2.1 in that document recommended that the NRC staff issue orders to all licensees to reevaluate seismic and flooding for their sites against current NRC requirements and guidance. Subsequent staff requirements memoranda associated with SECY-11-0124 and SECY-11-0137, instructed the NRC staff to issue requests for information to licensees pursuant to 10 CFR 50.54(f).

By letter dated March 11, 2015, Entergy Nuclear Operations, Inc. (Entergy, the licensee) submitted its Flood Hazard Reevaluation Report (FHRR) for Palisades Nuclear Plant (Palisades) (Agencywide Documents Access and Management System Accession No. ML15106A681). The NRC is reviewing the aforementioned submittal and has completed a regulatory audit of the licensee to better understand the development of the submittal, identify any similarities/differences with past work completed, and ultimately aid in its review of the licensee's FHRR. This audit summary was completed in accordance with the guidance set forth in NRC Office of Nuclear Reactor Regulation Office Instruction LIC-111, "Regulatory Audits," dated December 29, 2008 (ADAMS Accession No. ML082900195).

AUDIT LOCATION AND DATES

The audit was completed by document review via a webinar session in conjunction with the use of the licensee's established electronic reading room (ERR) and teleconference on November 9, 2015.

Enclosure

AUDIT TEAM

Title	Team Member	Organization
Team Leader, NRR/JLD	Vic Hall	NRC
Technical Monitor	Laura Quinn-Willingham	NRC
Technical Staff	Lyle Hibler	NRC
Technical Deputy Division Director	Andy Campbell	NRC
Technical Branch Chief	Aida Rivera-Varona	NRC
NRC Contractor	Eugene Yan	Argonne National Laboratory (ANL)
NRC Contractor	Vinod Maht	ANL
NRC Contractor	John Quinn	ANL

A list of the licensee's participants can be found in Attachment 2.

DOCUMENTS AUDITED

Attachment 1 of this report contains a list which details the documents that were reviewed by the NRC staff, in part or in whole, as part of this audit. The documents were located in an ERR during the NRC staff's review. The documents, or portions thereof, that were used by the NRC staff as part of the technical analysis and/or as reference in the completion of the staff assessment, were submitted by the licensee and docketed, as necessary, to complete the staff assessment. These documents are identified in Table 1.

AUDIT ACTIVITIES

In general, the audit activities consisted mainly of the following actions:

- Review background information on site topography and geographical characteristics of the watershed.
- Review site physical features and plant layout.
- Understand the selection of important assumptions and parameters that would be the basis for evaluating the individual flood causing mechanisms described in the 50.54(f) letter.
- Review model input/output files to computer analyses such as HEC-HMS and FLO-2D to have an understanding of how modeling assumptions were programmed and executed.

Table 1 summarizes specific technical topics (and resolution) of important items that were discussed and clarified during the audit. The items discussed in Table 1 may be referenced/mentioned in the staff assessment in more detail.

EXIT MEETING/BRIEFING

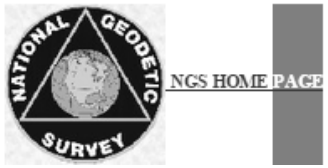
On December 23, 2015, the NRC staff closed out the discussion of the technical topics described above.

Table 1: Palisades Information Needs – Audit/Post-Audit Summary

INFO NEED	INFORMATION NEED DESCRIPTION	ACTION (POST-AUDIT)
1	**All Flood-Causing Mechanisms – Comparison of Reevaluated Flood Hazard with Current Design Basis** Background: Recommendation 2.1 of the 50.54(f) letter provides instructions for the Flood Hazard Reevaluation Report (FHRR). Under Section 1, Hazard Reevaluation Report, Items c and d, licensees are requested to perform: c. Comparison of current and reevaluated flood-causing mechanisms at the site. Provide an assessment of the current design-basis flood elevation to the reevaluated flood elevation for each flood-causing mechanism. Include how the findings from Enclosure 4 of this letter (i.e., Recommendation 2.3 flooding walkdowns) support this determination. If the current design-basis flood bounds the reevaluated hazard for all flood causing mechanisms, include how this finding was determined. d. Interim evaluation and actions taken or planned to address any higher flooding hazards relative to the design basis, prior to completion of the integrated assessment described below, if necessary. The Palisades FHRR provides a comparison of the reevaluated flood hazards with the CLB instead of the current design-basis. Section 4.0 of the report summarizes this comparison. Request: Clarify and where necessary correct the comparison of the reevaluated flood hazard to the current design bases.	The licensee stated that the CLB "is defined in 10 CFR 54.3(a) as applicable NRC requirements, licensee commitments, and plant specific design-basis information documented in the most recent final safety analysis report, for the purposes of the Palisades FHRR, current design basis (CDB) and current licensing basis (CLB) have the same meaning." The NRC staff will treat references to the the CLB as equivalent to the CDB in its review of the FHRR. As part of the licensee's response, the licensee showed a modification of FHRR Table 4-1 where: a) "CLB" was replaced with "CDB" in the table heading, b) storm surge CDB was clarified as "594.1 feet [mean sea level] MSL [Design basis flood level]", c) the difference in the Combined Effect Re-evaluated Flood Height was modified to read "flood levelare above the CDB flood protected elevation…", and d) the table note was modified: "Note: Not evaluated indicates the this flood mechanism was not defined of addressed in current design-basis documents. As a result, no comparison can be made to reevaluated results." The NRC staff concluded that the information provided by the licensee in response to this information need request was sufficient.

INFO NEED	INFORMATION NEED DESCRIPTION	ACTION (POST-AUDIT)
2	**Local Intense Precipitation – Site Structures and Critical Locations** Background: In FHRR Figure 3-1 and Figures 5, 13, and 14 in Calculation No. 32-9226944-002 "Palisades Nuclear Plant Flooding Hazard Re-evaluation – Local Intense Precipitation," the identification number for grid elements at locations identified as critical locations of the plant and the important site structures are either illegible or not labeled to reference the locations for the purpose of identifying flooding water depths and elevation based on the reevaluation. Request: FHRR Figure 3-1 (or selected figure from the LIP calculation package) should be modified or an additional similar figure should be provided that shows all the structures listed in Table 3-1 with their names, and representative grid elements for critical locations and their identification numbers.	In response to this information need request, the licensee modified figures provided that shows all the structures listed in Table 3-1 with their names, and representative grid elements for critical locations and their identification numbers. The NRC staff requested that these figures be submitted on the docket. The NRC staff concluded that the information provided by the licensee in response to this information need request was sufficient.
3	**Local Intense Precipitation – Boundary Condition of the FLO-2D Model along Lake Michigan** Background: Section 2.2.2 of the FHRR reports the highest recorded monthly mean elevation of Lake Michigan as 583.2 feet National Geodetic Vertical Datum of 1929 (NGVD29). This value was used as a fixed stage (water surface elevation) along the model extent of Lake Michigan as a boundary condition in the FLO-2D model as a conservative approach. Section 2.2.2 in Calculation No. 32-9226944-002, "Palisades Nuclear Plant Flooding Hazard Re-evaluation – Local Intense Precipitation," indicates that the constant stage was assigned to the boundary grid elements using the "reservoir water elevation" feature in the FLO-2D model. The staff examined the grid elements at the boundary of the model along the lake (the west edge of the model) as well as the model input files, and didn't find that the mean lake water elevation (583.2 feet NGVD29) is specified as	The NRC staff reviewed the licensee's updated input/output files for its revised model. The model was revised mainly to include a lake boundary along the western boundary of the FLO-2D model in response. The main conclusion in licensee's response is that adding a lake boundary in FLO-2D model has a minimal effect on the water surface elevation (WSE) at critical locations. After the NRC staff reviewed the input and output files and one independent run, and reached the same conclusion although the reservoir function used for lake boundary in FLO-2D may not be a correct method. The main observations and NRC staff's results are as follows: 1) A reservoir function was used in the licensee's FLO-2D model to create a reservoir with a specified lake level over a surface depression zone along the western boundary of the model. The reservoir was filled up to the specific lake level within the first time step (0.1 hr) but was not maintained at the specified lake level for

INFO NEED	INFORMATION NEED DESCRIPTION	ACTION (POST-AUDIT)
	a fixed "reservoir water elevation" in the model. The staff also reviewed the model results and found that the maximum water surface elevation at the model boundary along the lake is less than 581 feet NGVD29 suggesting that no constant lake level of 583.2 feet NGVD29 is maintained along the lake (the west boundary of the FLO-2D model) as the licensee described in the FHRR. Request: Examine and verify that the model boundary along Lake Michigan in the FLO-2D model is assigned correctly using the highest mean monthly lake elevation (583.2 feet NGVD29) and provide either justification or correct FLO-2D input files if necessary.	the rest of simulation period (24 hours). It dropped by about 2 ft via the simulation period. Apparently, using the reservoir method to define lake boundary in FLO-2D does not correctly reflect an actual lake boundary. 2) To confirm the licensee's conclusion, the NRC staff made an independent run by assigning a constant lake stage along the western boundary of the model. Results from this model run also indicate that the WSE at the critical location has a minimal increase, which means that the WSE at the critical locations is insensitive to the model boundary of the Palisades FLO-2D model. Based on this result, the NRC staff finds that the licensee does not need to update its model with a correct boundary setting method. The NRC staff concluded that the information provided by the licensee in response to this information need request was sufficient.
4	**Local Intense Precipitation – Vertical Datum Conversion** Background: The elevations in the FLO-2D model are used in the NGVD29 datum. The ground surface topography that was developed from an aerial survey conducted in 2014 using Light Detection and Ranging (LiDAR) technology which uses NAVD88 datum, and the Lake Michigan level that was taken from the National Oceanic and Atmospheric Administration (NOAA) Holland tide station uses IGLD85 datum. Section 1.1 and Appendix A in Calculation No. 32-9226944-002, "Palisades Nuclear Plant Flooding Hazard Re-evaluation – Local Intense Precipitation," notes that the web-based program, "VERTCON" (NGS, 2014a, and 2014b), results in the following relationship to convert NAVD88 and IGLD85 datums into NGVD29: NGVD29 = NAVD88 + 0.48 ft & NAVD88 = IGLD85 + 0.30 ft	The licensee stated that "an elevation of 1.0 ft NAVD88 was used to establish the datum conversion from NAVD88 to IGLD85 for Lake Michigan elevations. The arbitrary elevation of 1.0 ft was used to simplify the establishment of the conversion factor." The licensee noted that a NOAA web-based program was used and references to Appendix A in Calculation No. 32-9226944-002 "Palisades Nuclear Plant Flooding Hazard Re-evaluation – Local Intenser Precipitation," to document that use. The licensee then stated that "The resultant datum shift from NAVD88 to IGLD85 was -0.09 or -0.30 ft based on an input elevation of 1.0 ft NAVD88." The NRC staff concluded that the information provided by the licensee in response to this information need request was sufficient.

INFO NEED	INFORMATION NEED DESCRIPTION	ACTION (POST-AUDIT)
	The staff performed the datum conversion independently using the same web-based program and tool to verify whether the conversion is correct. The staff verified that the ground surface topography elevation conversion from NAVD88 to NGVD29 is correct. For conversion of Michigan Lake level from IGLD85 to NAVD88, however, the staff found a different relationship for the Palisades site: NAVD88 = IGLD85 + 0.48. The following shows the conversion on the NOAA website: **Conversion from IGLD 85 to NAVD 88** Designation North Latitude West Longitude Gravity NAVD 88 Heigh (gals) (meters) 42 19 23.01600 86 18 51.76800 980.31580 177.69  The difference between the two datums for the Lake Michigan at Palisades site is (177.6965 - 77.5518) * 3.28 = 0.47 feet (not 0.30 feet). The 177.55 meters (582.37 feet IGLD85) is the highest recorded monthly mean elevation of Lake Michigan, which is used in the FLO-2D model. The resulting vertical datum converted from 582.37 ft IGLD85 is 582.85 ft NAVD88 and 583.33 ft NGVD29. Request: Examine and verify that the conversion between the vertical datums was done correctly and correct where needed in any references used for this conversion.	
5	**Local Intense Precipitation – Supercritical Flow**	The licensee stated that “the duration in which the flow velocity exceeds the permissible velocity of rough asphalt of 12 feet per

INFO NEED	INFORMATION NEED DESCRIPTION	ACTION (POST-AUDIT)
	Background: FLO-2D PRO model limits supercritical flow by reducing the velocity. Thus, the actual velocity at the place where supercritical flow occurs would be higher than the velocity determined by the FLO-2D PRO model. The FHRR identifies a roadway near the cooling tank that has supercritical flow (Figure 3-7) and shows a manually calculated flow velocity based on the maximum flow at that place. The calculated flow velocity at this location is 15.6 feet per second, which is higher than permissible velocity (i.e., 12 feet per second for rough asphalt (USACE, 1984)). Section 6.4 in Calculation No. 32-9226944-002, "Palisades Nuclear Plant Flooding Hazard Re-evaluation – Local Intense Precipitation," assumes that this would not cause the significant erosion due to the short duration of high flow rates. Request: Provide the duration that speeds in excess of the permissible velocity last and a reference to support the conclusion that significant erosion would not be anticipated for that duration.	second at cross section No. 2 was estimated to be 54 minutes." The licensee concluded that "because the peak velocity exceeds the suggested permissible velocity by only 30 percent and only for less than an hour, it is likely that if any erosion of asphalt occurred, it would be limited." The licensee described the location where, "if erosion were to occur, it would happen at cross section 2 located near the toe of the cooling tower road that leads to the Cooling Towers." The licensee stated that erosion at this locations would not affect critical structures related to safety. The licensee references Calculation No. 32-9226944-002, "Palisades Nuclear Plant Flooding Hazard Re-evaluation – Local Intense Precipitation," in their response. The NRC staff concluded that the information provided by the licensee in response to this information need request was sufficient.
6	**Local Intense Precipitation – CDB, CLB, and Safety-Related Elevations** Background: The FHRR uses current design-basis (CDB: e.g., 594.1 ft NGVD29 and 594.4 ft NGVD29 in Section 2.2), current licensee basis (CLB: e.g., flood depth of 5 ft on the east side of Service Building and 0.5 ft for the rest of powerblock area in Sections 2.3.1.1 and 4.1.1 as well as Table 4-1), and safety-related elevations (e.g., 594.4 ft NGVD29 in Section 5, Tables 5.1 and 5.3). Request: a) Clarify if CDB, CLB and safety-related elevations are defined or used differently.	a) In response to this information need, the licensee stated that the CDB and CLB have the same definition and should be read as CDB where CLB is listed. However, through further discussion, the licensee agreed that the pump elevations and the CDB are not interchangeable, and are written to mean list two different elevations. The response to Information Need 1 for CDB and CLB resolves this info need. b) The licensee is going to defer providing additional information on associated effects to the MSA. c) This information need is resolved per Information Need 1 and 6a and the NRC staff now has the CDB number to complete the comparision with the reevaluated hazard.

INFO NEED	INFORMATION NEED DESCRIPTION	ACTION (POST-AUDIT)
	b) Provide an explanation (in Table footnotes) or justification for why the associated effect is bounded by CLB in Table 4-2, if the given effect has not been reevaluated (e.g., wind wave and runups). c) Specify that each critical location is bounded or not bounded by a selected criterion, such as CDB, CLB, or safety-related elevation, in Table 4-3, which provides the maximum flood elevations and depths based on the FLO-2D results for all the critical locations identified by the licensee. d) Provide either references or safety-related elevations (as indicated in Table 5-1) to support the evaluation and action for the last three critical locations in Table 5-2.	d) After discussions on Information Needs 1, 6a-c, the NRC staff determined that this information need was no longer needed.
7	**<u>Local Intense Precipitation – Runoff Loss (Infiltration Loss)</u>** <u>Background:</u> Section 3.1.2.1.2 of the FHRR and Section 6.2.5 in Calculation No. 32-9226944-002, "Palisades Nuclear Plant Flooding Hazard Re-evaluation – Local Intense Precipitation," account for the infiltration loss rate in the model based on the SCS curve number method. The estimation of the infiltration loss rate has some level of uncertainty, even though the SCS curve number method is commonly used. The guidance, NUREG/CR-7046 (NRC 2011), states that the infiltration loss rates should be set to minimum recommended values (FERC, 2001) for the drainage basin where estimated loss rates cannot be validated. The estimated infiltration rate at the Palisades site has not been validated. <u>Request:</u> Evaluate the infiltration loss using the loss rates recommended by NRC (2011) or justify the infiltration loss used. Confirm that loss rate obtained by using the SCS curve number method in the model is the same or more conservative than the loss rate obtained by using this NRC recommended values suggested by FERC (2001).	The licensee calculated the infiltration rates using a maximum value instead of minimum value (0.44 instead of 0.3) and states that they are in the range of the SCS curve (though higher range). The NRC staff determined that the justification for the use of 0.44 was reasonable, especially given the other conservativisms in the model. The HMR-PMP used by the licensee embodies a great deal of conservatism such that compounding that conservatism with parameter conservatism is not required or necessary for the R2.1 reviews. In the event that an analysis uses a sub-PMP event, additional parameter conservatism could be warranted; staff consider the HMR-based PMP to be primary source of conservatism. Because the LIP analysis for the Palisades site used a HMR-based event and reasonable (but not necessarily the most conservative) parameter values, the NRC staff determined that infiltration rate value used is reasonable. The response included that justification to establish the values reasonableness using site specific information. Because the value that the licensee used was in the range of the guidance that the licensee provided (at the upper end, however), the NRC staff concluded that reasonable value rather than a conservative characterization of this parameter was adequate for use in reevaluating the LIP

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		hazard. Considering the other conservatisms in the other LIP analysis, conservatisms do not need to be compounded for the purposes of the R2.1 site-specific justification. The licensee referenced NRCS guidance (NRCS, 2004) in the determination of soil curve numbers, maximum potential retention, and initial abstraction, net constant losses (infiltration). The licensee referenced Table 8-8.1, "Minimum Infiltration Rates for Hydrologic Soil Groups" FERC (2001). The NRC staff concluded that the information provided by the licensee in response to this information need request was sufficient.
8	**Failure of Dams and Onsite Water Control/Storage Structures** Background: In the March 12, 2012, 50.54(f) letter, Enclosure 2, licensees are requested to perform an evaluation of flood waves resulting from the breach of upstream dams, including domino-type or cascading dam failures. Water storage and water control structures (such as onsite cooling or auxiliary water reservoirs and onsite levees) that may be located at or above structures, systems, and components (SSCs) important to safety should also be evaluated. Additional effects for earthen embankments, such as sediment, should also be considered. Models and methods used to evaluate the dam failure and the resulting effects should be applicable to the type of failure mechanism and should be appropriately justified. Recent analyses completed by State and Federal agencies with appropriate jurisdiction for dams within the watershed may be used. The staff did not find an evaluation in the FHRR, of onsite water storage and water control structures, nor a statement that none exist at the site. The staff also reviewed PLP-RPT-15-00009	The licensee stated that "there are no onsite water control/storage structures (i.e., onsite cooling or auxiliary water reservoirs and onsite levees) located at or above SSCs important to safety." The licensee referenced "PLP FSAR, Figure 1-1, Sht 1 and Figure 1-1, Sht 2)." The NRC staff concluded that the information provided by the licensee in response to this information need request was sufficient.

INFO NEED	INFORMATION NEED DESCRIPTION	ACTION (POST-AUDIT)
	"Palisades Nuclear Plant Flooding Hazard Re-Evaluation – Screening for Dam Failures" as posted in the Palisades Electronic Reading Room and found no statement regarding onsite water control/storage structures within it. Request: Provide a flood hazard evaluation of onsite water control/storage structures if any exist, or provide a statement that no such structures exist at the site.	
9	**Combined Effect – Flood Event Duration and Associated Effects** Background: FHRR Section 4.1 and Table 4-4 identifies several associated effects and indicated that the effects of sediment deposition/erosion was not evaluated but determined to be bounded by the CLB. The FHRR also states that the flood event duration parameters were not evaluated. The staff reviewed Calculation No. EA-EC5490-03, "32-9226981-000 - Palisades Nuclear Plant Flooding Hazard Re-evaluation – Combined Events" and did not find this information. Request: Provide quantitative evaluation for the flood height and associated effects (as defined in Section 9 of JLD-ISG-2012-05) for the combined event, or describe when the evaluation will be performed. Provide flood event duration parameters associated with the combined event, or describe when the parameters will be provided. The flood event duration parameters and associated effects with the combined event include all parameters and effects listed in FHRR Table 4-4.	The licensee's response include statements related to flood duration and associate effects. These statements included: "Calculations for hydrostatic, hydrodynamic, wave and debris loads are included in Sections 2.4 and 6.4 of the Palisades Combined Events Calculation (32-9226981-000 – Palisades Nuclear Plant Flooding Hazard Re-evaluation – Combined Events). "Flood durations above sites grade was calculated at approximately 25 hours. The calculation was based on that eduratino of the surge hydrograph above the PLP site grade presented in Section 6.4 of the Palisades Combined Events Calculation, "32-9226981-000 – Palisades Nuclear Plant Flooding Hazard Reevaluation – Combined Events." "Groundwater in the vicinity of the site is generally controlled by the level of Lake Michigan (PLP, 2014). The surge hydrograph is above PLP site grade for approximately 25 hours. Permeability data from the FSAR indicates that the sandy lake deposits under the dunes have a slow percolation rate. Because of the relatively short duration of flooding and slow percolation rate for the underlying soil, short-term water level changes (i.e., storm surge) is unlikely to affect groundwater levels in the vicinity of the PLP."

INFO NEED	INFORMATION NEED DESCRIPTION	ACTION (POST-AUDIT)
		Regarding sediment deposition and erosion, “The coastline near PLP is not within a high risk erosion area as defined by the Michigan Department of Environmental Quality as shown in Appenix J (MIDEQ, 1996).” The NRC staff concluded that the information provided by the licensee in response to this information need request was sufficient.

ATTACHMENT 1
Palisades Audit Document List

1. FERC (Federal Energy Regulatory Commission). 2001. Engineering Guidelines for the Evaluation of Hydropower Projects, Chapter 8 – “Determination of the Probable Maximum Flood.” Washington, D. C.

2. AREVA. 2014. Palisades Nuclear Plant Flooding Hazard Re-Evaluation - Local Intense Precipitation. Document No. 32-9226944-002. January 30, 2014.

3. AREVA. 2014. Palisades Nuclear Plant Flooding Hazard Re-Evaluation – Combined Event. Document No. 32-9226944-002. January 30, 2014.

4. NRCS. 2004. Chapter 9 hydrlogi9c Soil-Cover Complexes, Part 630 hydrology, National Engineering Handbook.

ATTACHMENT 2
List of Entergy Audit Participants

Name	Organization
1. Don Bentley	Entergy
2. Gregory Hubers	Entergy
3. Barbara Owens	Entergy
4. Cindy Fasano	AREVA
5. Stacy Thomson	AREVA
6. Chad Cox	GZA
7. Bryant Furtado	GZA
8. David Leone	GZA

If you have any questions, please contact me at (301) 415-2621 or by e-mail at Robert.Bernardo@nrc.gov.

Sincerely,

/RA/

Robert Bernardo, Project Manager
Office of Nuclear Reactor Regulation
Japan Lessons-Learned Division
Hazards Management Branch

Docket No. 50-255

Enclosure:
Audit Report

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NAME	TGovan	SLent	LHibler	RRivera-Lugo
DATE	06/24/2016	06/22/2016	07/29/2016	07/29/2016
OFFICE	NRO/DSEA/RHM2/BC	NRR/JLD/JHMB/BC	NRR/JLD/JHMB/PM	
NAME	ARivera-Varona	GBowman	RBernardo	
DATE	07/13/2016	06/26/2016	08/03/2016	

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