

# Record of Review

## Dispositions to Palisades Nuclear Plant (PNP) Internal Events PRA (IEPRA) Facts and Observations (F&Os)

FINDING/ SUGGESTION (F&O) ID OR SUPPORTING REQUIREMENT (SR)	ACCEPTABLE TO STAFF VIA		
	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in the SE	Discussed in the SE
AS-A2-01	B		
AS-A3-01	A		
AS-A10-01	B		
AS-C2-01	A		
DA-A2-01	B		
DA-C7-01	A		
DA-D1-01	A		
DA-D8-01		See PRA RAIs 28.i. Acceptable to the NRC staff because the licensee provided justification that the collection period for plant-specific data adequately represents plant performance, clarifying that a review of plant experience, including maintenance rule data and maintenance work orders, was performed over a period of approximately three years.	
HR-A1-01	A		
HR-A2-01		See PRA RAI 28.a. Acceptable to the NRC staff because although the licensee reports an increase in the IEPRA CDF and LERF with use of accepted pre-initiator HEP scoping values (i.e., those from NUREG-1792), there is no impact on the NFPA 805 application with regard to IEPRA risk results given that the LAR presents negative change-in-risk estimates for both CDF and LERF.	See PRA RAI 28.a.01 (regarding the impact on the FPRA)
HR-C2-01		See PRA RAIs 28.i. Acceptable to the NRC staff because the licensee provided justification that the collection period for plant-specific data adequately represents plant performance, clarifying that a review of plant operating experience, including condition reports, was performed over a period of approximately four years.	
HR-E3-01		See PRA RAI 28.b. Acceptable to the NRC staff because the licensee clarified that the completeness of detailed reviews of human failure	

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	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in the SE	Discussed in the SE
		events (HFEs) with plant operations and training personnel for the latest IEPRA model update used to support the FPRA does not impact the FPRA given that all HFEs credited in the FPRA, including those carried over from the IEPRA, are re-evaluated as part of the FPRA. Additionally, although completion of detailed reviews may result in a change to the IEPRA risk results, there is no impact on the NFPA 805 application given that the LAR presents negative change-in-risk estimates for both CDF and LERF.	
HR-G6-01	A		
HR-G7-01		See PRA RAI 28.c. Acceptable to the NRC staff because the licensee confirmed that a complete HRA dependency analysis was performed for the IEPRA model referenced in Attachment W of the LAR. Although the HRA dependency analysis for the latest IEPRA model update used to support the FPRA is in process, the licensee further clarified that the level of dependence between combinations of actions within the FPRA are explicitly reassessed without regard to combinations that may have been identified for the IEPRA. Additionally, there is no impact on the NFPA 805 application with regard to the IEPRA risk results given that the LAR presents negative change-in-risk estimates for both CDF and LERF.	
HR-I3-01	A		
IE-A6-01	B		
IE-A6-02	A		
IE-A8-01	B		
IE-A9-01		See PRA RAIs 28.i. Acceptable to the NRC staff because the licensee provided justification that the	

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	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in the SE	Discussed in the SE
		collection period for identifying plant-specific initiating events adequately represents plant performance, clarifying that no additional initiating events were identified during either the 1996-2003 license event report review or the 2005-2008 data review of maintenance rule data and maintenance work orders.	
IE-C2-01		See PRA RAIs 28.i. Acceptable to the NRC staff because the licensee provided justification that the collection period for identifying plant-specific initiating events adequately represents plant performance, clarifying that no additional initiating events were identified during the 1996-2003 license event report review and the 2005-2008 data review of maintenance rule data and maintenance work orders. The licensee further clarified that generic data that covered the time frame through the end of 2002 already included plant-specific evidence for Palisades.	
IE-C6-01	B		
LE-G5-01		See PRA RAI 28.d. Acceptable to the NRC staff because the licensee clarified there are no specific limitations in the LERF analysis that would impact the NFPA 805 application.	
MU-B2-01	B		
MU-B4-01	A		
MU-D1-01	A		
QU-A3-01		See PRA RAI 28.e. Acceptable to the NRC staff because the licensee stated that the latest IEPRA model update, which was used to support the FPRA but which is in process of being completed, will make use of Monte Carlo simulation and Latin Hypercube Sampling in SAPHIRE to	

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	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in the SE	Discussed in the SE
		address parametric uncertainty, accounting for the state-of-knowledge correlation. The licensee further clarified that for basic events that are common to the FPRA, the basic event correlation and uncertainty parameters have been developed for use in the FPRA. Although the IEPRA HRA uncertainty analysis, which could potential impact IEPRA risk results, has not been finalized, there is no impact on the NFPA 805 application given that the LAR presents negative change-in-risk estimates for both CDF and LERF.	
QU-B2-01		See PRA RAI 28.f. Acceptable to the NRC staff because the licensee confirmed that a truncation study has been performed for the IEPRA model referenced in Attachment W of the LAR. Although a truncation study for the latest IEPRA model update used to support the FPRA is in process, there is no impact on the NFPA 805 application with regard to IEPRA risk results given that the LAR presents negative change-in-risk estimates for both CDF and LERF.	
QU-C1-01		See PRA RAI 28.c. Acceptable to the NRC staff because the licensee confirmed that a complete HRA dependency analysis was performed for the IEPRA model referenced in Attachment W of the LAR. Although the HRA dependency analysis for the latest IEPRA model update used to support the FPRA is in process, the licensee further clarified that the level of dependence between combinations of actions within the FPRA are explicitly reassessed without regard to combinations that may have been identified for the IEPRA. Additionally, there is no	

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	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in the SE	Discussed in the SE
		impact on the NFPA 805 application with regard to the IEPRA risk results given that the LAR presents negative change-in-risk estimates for both CDF and LERF.	
QU-D1-01		See PRA RAI 28.g. Acceptable to the NRC staff because the licensee clarified that that a reasonableness review was performed on all accident sequences from the IEPRA model used to support the FPRA, individually evaluating the logic of the top 100 cutsets based on CDF, the top 5 cutsets in each sequence, and a sampling of non-dominant cutsets. Although completion of the reasonableness review of the IEPRA model update used to support the FPRA could potentially impact IEPRA risk results, there is no impact on the NFPA 805 application given that the LAR presents negative change-in-risk estimates for both CDF and LERF.	
SC-C3-01	A		
SY-A13-01	B		
SY-A20-01		See PRA RAIs 28.i. Acceptable to the NRC staff because the licensee provided justification that the three-year collection period for plant-specific data adequately represents plant performance, clarifying that it encompasses two full refueling cycles. Noting that maintenance at Palisades is based on a cycle schedule, the licensee concluded with high confidence that any routine periods of coincident unavailability would be identified.	
SY-B3-01	A		
SY-B5-01	B		
SY-B5-02	A		
SY-B11-01	A		
SY-B12-01		See PRA RAI 28.h. Acceptable to the	

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	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in the SE	Discussed in the SE
		NRC staff because the licensee states that control room HVAC is excluded from the IEPRA model due to the high design temperature limits of major control room components, the weakest link components not being credited in plant EOPs, and the general conservative modeling assumptions employed by the analysis.	
SY-B12-02	B		
IFEV-A5-01	C		
IFEV-A5-02	C		
IFEV-A5-03	C		
IFEV-A5-04	C		
IFEV-A7-01	C		
IFQU-A3-01	C		
IFQU-A6-01	C		
IFQU-A7-01	C		
IFQU-A9-01	C		
IFSN-A15-01	C		
IFSN-A17-01	C		
IFSN-A3-01	C		
IFSN-A6-01	C		
IFSO-A4-01	C		
AS-C2-02	A		
DA-C16-01	B		
DA-D4-01	A		
HR-C1-01	A		
HR-D4-01	A		
HR-E1-01	A		
HR-E1-02	A		
HR-H1-01	A		
IE-B3-01	A		
IE-B4-01	A		
IE-C1-01	A		
IE-C12-01	A		
IE-C14-01	A		
LE-C9-01	A		
MU-B3-01	A		
QU-A1-01	B		
SC-A5-01	A		
SC-B5-01	A		

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	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in the SE	Discussed in the SE
SC-C2-01	A		
SY-B4-01	A		
SY-B14-01	A		
SY-B15-01	A		
SY-C2-01	A		
IFSN-A12-01	C		
IFSN-A8-01	C		
IFSO-A1-01	C		

A: For F&Os, the NRC staff finds that the disposition of the F&O as described by the licensee in the LAR provides confidence that the issues raised by the F&O have been addressed and, if needed, the PRA has been modified, and therefore the resolution of the F&O is acceptable for this application. For Not Met or met at CC-I SRs, the NRC staff finds that the acceptability basis for the capability category of the SR as described by the licensee in the LAR provides confidence that the requirements of the SR have been addressed and, if needed, the PRA has been modified, and therefore the PRA quality with respect to the SR is acceptable for this application. Examples of acceptable Not Met and CC-I SRs are modeling methods that yield conservative FRE and change evaluation results.

B: For F&Os, the NRC staff finds that the disposition of the F&O as described by the licensee in the LAR and further clarified during the audit provides confidence that the issues raised by the F&O have been addressed and, if needed, the PRA has been modified, and therefore the resolution of the F&O is acceptable for this application. For Not Met or met at CC-I SRs, the NRC staff finds that the acceptability basis for the capability category of the SR as described by the licensee in the LAR and further clarified during the audit provides confidence that requirements of the SR have been addressed and, if needed, the PRA has been modified, and therefore the PRA quality with respect to the SR is acceptable for this application. Examples of acceptable Not Met and CC-I SRs are modeling methods that yield conservative FRE and change evaluation results.

C: For F&Os, the NRC staff finds that the resolution of the F&O, as described by the licensee in the LAR, would have a negligible effect on the evaluations relied upon to support fire risk evaluations and has no impact on the conclusions of the risk assessment and therefore the resolution of the F&O is acceptable for this application. Examples of such F&Os may be suggestions, as well as those F&Os that don't affect the FPRA. Documentation issues may fall into this category as well. For Not Met or met at CC-I SRs, the NRC staff finds that the acceptability basis for the capability category of the SR, as described by the licensee in the LAR, would have a negligible effect on the evaluations relied upon to support fire risk evaluations and has no impact on the conclusions of the risk assessment and therefore the PRA quality with respect to the SR is acceptable for this application. Examples are those SRs that don't affect the FPRA.