

Record of Review for Dispositions to Prairie Island Nuclear Generating Plant, Units 1 and 2, Internal Events PRA and Fire PRA Facts and Observations

By letter dated April 30, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML14125A106 and ML14125A149), Northern States Power Company, a Minnesota Corporation, (the licensee) submitted a license amendment request (LAR) for Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2, to transition to National Fire Protection Association Standard (NFPA) 805.

Attachments U and V of the LAR provide the licensee's dispositions to the Facts and Observations (F&Os) from the internal events (including internal flooding) and fire probabilistic risk assessment (PRA) peer reviews, respectively. The Nuclear Regulatory Commission (NRC) staff evaluated the F&Os and the associated dispositions in LAR Attachments U and V to determine whether the F&Os had any significant impact for the application. The NRC staff's review and conclusion for the licensee's resolution of each F&O and basis of acceptability of Supporting Requirements that are "not met" or only met at Capability Category I is summarized in Tables 1 and 2 for the internal events PRA and fire PRA, respectively.

Table 1. Record of review for the dispositions to PINGP internal events PRA F&Os.

F&O IDENTIFICATION OR SUPPORTING REQUIREMENT (SR)	ACCEPTABLE TO STAFF VIA		
	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in Safety Evaluation	Discussed in Safety Evaluation
AS-B3	A		
DA-C9	A		
DA-D2	A		
DA-D3	A		
DA-D4	A		
DA-D8	A		
DA-E3	A		
HR-D2	A		
HR-G1	A		
IE-C10	A		
IE-C14	A		
LE-C3	A		
LE-F1	A		
LE-G5	A		
MU-F1	A		
QU-A3	A		
QU-C2			See PRA RAIs 02.a and 03.
QU-D4	A		
SY-A4	A		
SY-A8		See PRA RAI 02.b. Acceptable to the NRC staff because the	

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	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in Safety Evaluation	Discussed in Safety Evaluation
		licensee explained that although the finding remains open, the current modeling is considered conservative in that there are some individual component basic events within the FPRA model that are already accounted for within the overall component boundary	
SY-A17	A		
SY-B14		See PRA RAI 02.c. Acceptable to the NRC staff because the licensee explained that the PRA model considers potential NPSH issues related to RHR pump operability during events in which the containment sump is used as the supply source to the Reactor Coolant System. The licensee further clarified that based on pump NPSH requirements, NPSH testing and analysis, and supporting thermodynamic calculations, it was concluded that there is no need to model Containment Fan Coil Units and/or Containment Spray operation/failure in the accident sequence evaluations.	
IFPP-B3-01	C		
IFPP-A2-01	C		
IFSN-A10-01	C		
IFSO-A1-01	C		
IFQU-A6-01	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.

Table 2. Record of review for the dispositions to PINGP fire PRA F&Os.

F&O IDENTIFICATION OR SUPPORTING REQUIREMENT (SR))	ACCEPTABLE TO STAFF VIA		
	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in Safety Evaluation	Discussed in Safety Evaluation
PP-C3-01	A		
ES-C1-01		See PRA RAI 01.a. Acceptable to the NRC staff because instrument cables are mapped to fire scenarios. Additionally, associated instrumentation is modeled in the FPRA for cases in which there is a partial fire impact (a minimum set of the required instrumentation is available) or total fire impact (less than the minimum set of required instrumentation is available).	
CS-A10-01		See PRA RAI 01.b. Acceptable to the NRC staff because the licensee	

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	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in Safety Evaluation	Discussed in Safety Evaluation
		explained that cable routing information available (i.e., cable to equipment, cable to raceway, and raceway to location) was used to conservatively map conduits containing FPRA target cables to the appropriate fire compartments and areas. In cases for which additional refinement was needed, the licensee stated that additional walkdowns were performed to identify conduits and cable trays within the zone of influence.	
CS-B1-01	A		
PRM-A1-01	A		
PRM-A1-02		See PRA RAI 01.c. Acceptable to the NRC staff because the licensee stated that the instrument air system is not credited in the FPRA; that is, all scenarios conservatively result in its failure.	
PRM-A1-03	A		
PRM-A2-01	A		
PRM-B2-01	A		
PRM-B13-02	A		
PRM-C1-01	A		
FSS-A5-01	C		
FSS-B2-01			See PRA RAIs 01.d, 01.d.01, 01.e, 01.e.01, 01.f, 01.f.01, 03 and 12.
FSS-C1-01	A		
FSS-C5-01			See PRA RAIs 01.f, 01.f.01 and 03.
FSS-C8-01	A		
FSS-D7-01	A		
FSS-D7-02			See PRA RAIs 01.g and 03.
FSS-D8-01	A		

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	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in Safety Evaluation	Discussed in Safety Evaluation
FSS-D9-01	A		
FSS-D10-01	A		
FSS-F1-01	C		
FSS-F3-01	A		
FSS-G2-01	A		
FSS-G6-01	A		
FSS-H5-01	A		
FSS-H5-02	A		
FSS-H9-01	A		
FSS-H10-01	A		
IGN-A1-01			See PRA RAIs 01.h, 01.h.01 and 03.
IGN-A7-01	A		
IGN-A7-02	A		
IGN-A9-01	A		
IGN-B5-01	A		
FQ-A2-01	A		
FQ-B1-02	A		
FQ-E1-01	A		
FQ-F1-01	A		
UNC-A1-01	A		
UNC-A2-01	A		
FSS-D6-01			See Section 3.4.2.3.
CS-A10		See PRA RAI 01.b. Acceptable to the NRC staff because the licensee explained that cable routing information available (i.e., cable to equipment, cable to raceway, and raceway to location) was used to conservatively map conduits containing FPRA target cables to the appropriate fire compartments and areas. In cases for which additional refinement was needed, the licensee stated that additional walkdowns were performed to identify conduits and cable trays within the zone of influence.	
CS-B1	A		

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	Review of Plant Disposition (A/B/C)	RAI Response	
		Not Discussed in Safety Evaluation	Discussed in Safety Evaluation
CS-C4	A		
FSS-B2			See PRA RAIs 01.d, 01.d.01, 01.e, 01.e.01, 01.f, 01.f.01, 03 and 12.
FSS-C8	A		
FSS-D9	A		
FSS-F3	A		
FSS-G6	A		
FSS-H5	A		
IGN-B5	A		
FQ-A2	A		
FQ-E1	A		
FQ-F1	A		
UNC-A1	A		
UNC-A2	A		

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