

**NFPA 805 Pilot Observation Meeting
May 30 to June 1, 2007**

Response to NRC Comments on Progress Energy In-Process Work Products

Discipline/Program Review		Scope of Review	
Fire Protection		FPIP-0122 Expert Panel Review of Multiple Spurious Actuations	
Reviewer	Discipline	Date	Turnover Required?
NRC			
Item	Comment	Resolution	
1	<p>9.1. The expert panel review may be the only one of the three inputs (SSD analysis and internal events PSA reviews are the others) that can identify previously unknown or dismissed circuit failure combinations. The guidance from RIS 2004-03 (note incorrect reference to RIS 2003-04) is intended for inspection purposes and not as a limiting factor for fire PSA. The expert panel should consider combinations of >2 cables if the "3-4 circuit failures" are possible, as well as intercable thermosets. (RG)</p>	<p>Typo on RIS 2004-003 will be corrected.</p> <p>The current licensing basis for Progress Energy plants assumes and analyzes all credible circuit faults; however, these faults are not assumed to occur simultaneously. This method is commonly referred to as "any and all one at a time". In light of more recent information regarding credible circuit failures, Progress Energy plants have included additional circuit failure modes in their Safe Shutdown Analyses, including:</p> <ul style="list-style-type: none"> • Multiple concurrent hot shorts for conductors within a single cable if the cable contains a viable source conductor. • Proper polarity conductor-to-conductor 2-wire ungrounded dc circuits where the source and target conductors are internal to the same multi-conductor cable. • Two concurrent but independent hot shorts (i.e., different source conductor for each hot short) for any one component. <p>It should be noted that these additional circuit failure modes are considered to be outside of the current licensing basis.</p> <p>As part of transition to NFPA 805 additional circuit failure scenarios will be analyzed. The intent is to insure that any risk significant multiple spurious circuit failures are identified and evaluated. Some of the steps being utilized during NFPA 805 transition include:</p> <ul style="list-style-type: none"> • Expert panel • PSA search for additional pairs • PSA search for beyond 2 multiple spurious operations • PSA cut set review (limited to what is in PSA model). 	

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2	Att. 3, 1.2. Under Phase 2, while it is appropriate to discuss regulatory guidance, note that the fire PSA is not limited in scope by regulatory guidance for MSOs (see above). (RG)	See Item 1 response.	
3	Att. 3, 1.2.1. In light of Duke's recent armored cable tests, you may want to remove the armored cable example under the second bullet. (RG)	Section will be reviewed and/or revised to choose a more applicable example from NUREG-6850.	
4	It would aid my understanding if the term "required cable" was defined, similar to the RIS 2004-03 sentence: If damage to the circuits or cables under consideration would have a direct impact on the operation of equipment or systems that are relied on to perform an essential shutdown function, the circuits and cables are considered "required circuits." (SL)	Any cable that could adversely impact a safe shutdown components ability to achieve/maintain its required safe shutdown function is included in the safe shutdown circuitry. As part of NFPA 805 transition, this term will be clarified.	
5	Definition 3.10, "Risk Significant," is not about risk but likelihood. Since we use risk as a defined term, I think they should change this to something like "Candidate Spurious Actuations" or delete the definition. (SL)	This is a defined term in other regulatory documents. Progress Energy will review/revise FPIP-0122 with a more appropriate term.	
6	In Section 9.3, there is no requirement for how much experience the "experts" need to have. Further, the quorum specifies a number of members, but does not ensure key individuals are present - for example, I would say that an electrical or I&C engineer who is very familiar with the plant wiring diagrams and schematics would be a "must" for any such meeting. (SL)	<p>In the current PE Engineering Organization the SSA Engineer is a member of the Elect./I&C Design Unit. As such, the SSA Engineer has an extensive background in these disciplines or has immediate access to individuals possessing the needed knowledge and experience.</p> <p>Additionally, FPIP-0122 is being reviewed to provide further guidance on documenting the type of experience that is required, as well as the actual experience of the Panel Members.</p>	

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7	In Section 9.4 - I do not agree that no training is necessary. I would say that training on the definitions ("required cable;" "Bin 1," etc.) and on the meaning of the criteria would be necessary. (SL)	The Expert Panel process relies on the diverse background/experience of its members in the areas of operations, PSA, safe shutdown, fire protection, and design. As stated in Section 9.4, the Chairman provides a briefing to the panel members regarding the historical timeline/development of multiple spurious circuit failures. There are some intrinsic steps that Panel Members should meet, such as having read and understood the Project Instruction, and this is not explicitly stated. PE to review/revise to provide clarification of training requirements.	
8	Section 3.10, Risk Significant.: Guidance is for selection of concurrent multiple spurious actuations based on RIS-2004-03 classification of "most risk significant". What are the actual criteria for that assessment? (JC)	The criteria used is unrecoverable plant conditions or equipment damage using the Appendix R/NUREG 0800 Performance Goals.	
9	Section 9.1 Background. Circuit Analysis.: Focuses the expert panel on reviewing "high risk", potential two cable failures per scenario. There may be combinations that are overlooked using that approach. Has the licensee considered other means to achieve this goal? (JC)	See Item 1 response.	