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Page 1:

Purpose of FAQ: “Clarify the ‘non-power’ plant operational states that correspond to configurations during which there is a **high significant increase in** risk associated with **the partial or total** loss of a KSF **due to fire**. This takes into account the consequences of the **partial or total** loss of a KSF, not just the increased likelihood of the **partial or total** loss of a KSF **due to fire**.” (The difference between partial vs. total loss is moot if there is only one “success path” for maintaining a KSF. The change is meant to address situations where multiple pathways exist and one or more could be lost due to fire such that one or more pathways still remain but the increase in risk from this partial loss is significant (a term which may have to be defined – one option is to define as a condition such that the plant “risk” state either enters ORANGE or RED from a “less risky” condition). It is NOT the intent of this change to require that multiple pathways be established, only that, when such multiples exist, that loss of one or more, even if one or more still remains, be examined for “risk” increase, using “risk” loosely in the sense of “color states” for outage management. This would be considered an adequate surrogate for a shutdown PRA.) [RHG]

Details: “High Risk Evolutions” – the proper term should be “**Higher** Risk Evolutions.” (Make this change throughout the FAQ.) [RHG]

Page 2:

Details: “The point of the strategy should be to evaluate and manage the effects of a fire, **but not necessarily** when the plant is more susceptible to an event causing the **partial or total** loss of a key safety function (KSF). ~~Rather, t~~The strategy should address configurations during which there is a **high significant increase in** risk associated with the **partial or total** loss of a KSF **due to fire**. This takes into account the consequences of the **partial or total** loss of a KSF **due to fire**, not just the increased likelihood of the **partial or total** loss of a KSF **due to fire**. Therefore, the strategy defined in NEI 04-02 will be based on configurations or Plant Operating States (POS) during an outage where the risk is intrinsically high, **including POS whose risk may normally (i.e., under “non-fire” considerations) not be intrinsically high but become so due to fire**, and will utilize normal risk management controls, processes and procedures during ~~low risk~~ periods **where, despite potential fire effects, the risk remains low**.” (A key point here is that HREs should not be limited just to those traditionally addressed under non-fire considerations, but ones which would “normally” not be HREs but could become so due to fire.) [RHG]

Fire effects on POS should include the possibility to increase an initiator, especially LOSP, loss of RHR, loss of level control and RCS draindown. One should also address how fire frequency may be increased due to maintenance/modification activities in critical compartments. [WGR]

Response Section – Proposed Resolution: “Many studies have been performed to characterize the risk associated with non-power states. Using Core Damage Frequency (CDF) as a risk metric, it is accepted that, **absent consideration of fire**, most outage

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configurations or POS are of relatively low risk and that only a few configurations or POS represent a risk near or greater than at-power operations.” **(The cited NUREGs notwithstanding, the insertion regarding fire more accurately characterizes current perceptions regarding the potential influence of fire on LP/SD risk.)** [RHG]

**Page 5:**

Disposition of POS: “Based on the studies cited above and the understanding that LPSD risk is concentrated in only certain POS, the strategy described in Section 4.3.3 of NEI 04- 02 **should** be limited to those high risk POS or configurations, **provided these POS include those whose risk may normally (i.e., under “non-fire” considerations) not be intrinsically high but become so due to fire.** Beyond these high risk POS or configurations, additional analyses or controls are not warranted and normal controls, processes, procedures provide adequate protection. The disposition of the POS with respect to NFPA 805 risk evaluations, **including fire considerations,** are provided in Tables 1 and 2.” **(Additions here are consistent with previous comments. Ensure that Tables 1 and 2 include fire considerations when screening any POS a priori.)** [RHG]

**Pages 5-7[WGR]:**

Disposition of POS, Tables 1 and 2: **(Note – the following comment may have been directed more at the presentations by Oconee and Harris during the Observation Visit than the wording in FAQ 40, but they are offered here as the most likely area where they might apply.) There needs to be a basis for the criteria (POS?) that are being selected, including specific acceptance criteria.**

**Page 8:**

4.3.3 (Non-Power Operational Modes Transition Review): “The strategy for additional controls/protection of equipment during non-power operations, for plants adopting NFPA 805, will be based on configurations or Plant Operating States (POS) during the outage where the risk ~~is~~ could be intrinsically high, **including fire effects.** *The point of the strategy will be to evaluate and manage the risks of a fire, but not necessarily when the plant is more susceptible to an event causing the loss of a key safety function (KSF). Rather, the strategy should address configurations during which there is a high risk associated with the loss of a KSF. This takes into account the consequences of the loss of a KSF, not just the increased likelihood of the loss of a KSF. During periods of low risk normal risk management controls, processes and procedures will be utilized.*” **(Text in italics should be revised consistent with that shown previously in comment regarding “Details” from page 2.)** [RHG]

4.3.3 (Non-Power Operational Modes Transition Review): “*Many studies have been performed to characterize the risk associated with non-power states. Using Core Damage Frequency (CDF) as a risk metric, it is accepted that most outage configurations or POS are of relatively low risk and that only a few configurations or POS represent a risk near or greater than at-power operations.*” **(Text in italics should be revised consistent with**

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that shown previously in comment regarding “Response Section – Proposed Resolution” from page 2.) [RHG]

*Page 9:*

4.3.3 (Non-Power Operational Modes Transition Review): “Identify fire areas where a single fire may damage ~~all~~ **one or more of** the credited paths for a KSF during the required plant operational state. This may include fire modeling to determine if a postulated fire (MEFS – LFS) would be expected to damage required equipment. For those areas **where (1) all credited paths are lost or (2) enough credited paths are lost to potentially cause a significant increase in risk**, consider combinations of the following options ...” (See explanation and suggested option accompanying comment regarding “Purpose of FAQ” from page 1.) [RHG]

4.3.3 (Non-Power Operational Modes Transition Review): “It is important to note that shutdown PRAs ~~do not exist~~ **are not in widespread use** at this time.” [RHG]

*Page 10 (starts on 9):*

F.1 Determination of Plant Operational States Requiring Additional Protection/Controls During Non-Power During an Outage: *“The point of the strategy defined in NEI 04-02 will be to evaluate and manage the risk of a fire and not necessarily identify when the plant is more susceptible to an event causing the loss of a key safety function (KSF). Rather, the strategy will address configurations during which there is a high risk associated with the loss of a KSF. This takes into account the consequences of the loss of a KSF, not just the increased likelihood of the loss of a KSF. Therefore, the strategy defined in NEI 04-02 will be based on configurations or Plant Operating States (POS) during an outage where the risk is intrinsically high, and will utilize normal risk management controls, processes and procedures during low risk periods. Many studies have been performed to characterize the risk associated with non-power states. Using Core Damage Frequency (CDF) as a risk metric, it is accepted that most outage configurations or POS are of relatively low risk and that only a few configurations or POS represent a risk near or greater than at-power operations.”* (Text in italics should be revised consistent with that shown previously in comments regarding “Details” and “Response Section – Proposed Resolution” from page 2. See also comments from page 8.) [RHG]

*Page 12:*

Disposition of POS: *“Based on the studies cited above and the understanding that LPSD risk is concentrated in only certain POS, the strategy described in Section 4.3.3 of NEI 04-02 be limited to those high risk POS or configurations. Beyond the high risk POS or configurations, additional analyses or controls are not warranted and normal controls, processes, procedures provide adequate protection. The disposition of the POS with respect to NFPA 805 risk evaluations are provided in Tables 1 and 2. For other non-power conditions (e.g., PWR Mode 3, BWR Startup Mode 2), it is recommended that the*

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~~normal risk management controls, processes and procedures provide adequate protection-at-power process be used, since it should generally be bounding.~~” (Text in italics should be revised consistent with that shown previously in comment regarding “Disposition of POS” from page 5. Subsequent replacement made to correct apparent typographical error relative to same section from page 5. Also, as in referenced previous comment, ensure that Tables 1 and 2 include fire considerations when screening any POS a priori.) [RHG]

*Page 14:*

F.1.2 Methodology: “*Identify fire areas where a single fire may damage all the credited paths for a KSF. This may include fire modeling to determine if a postulated fire (MEFS – LFS) would be expected to damage required equipment. For those areas consider combinations of the following option ...*” (Text in italics should be revised consistent with that shown previously in comment regarding “4.3.3 (Non-Power Operational Modes Transition Review)” from page 9.) [RHG]

*Page 15:*

F.2 Methodology: “It is important to note the evaluation of the plant during non-operational modes is qualitatively risk-informed at this time pending ~~the development more widespread use~~ of shutdown PRAs.” [RHG]

*Pages 16-17 [RHG]:*

Modify the entries in Table F-1 to be consistent with the previous corresponding comments [e.g., “partial or total” loss of KSFs “due to fire;” “one or more of” the credited paths for a KSF; areas “where (1) all credited paths are lost or (2) enough credited paths are lost to potentially cause a significant increase in risk”].