

FAQ Title Establishing Recovery Actions

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805 TF FPWG RATF RIRWG BWROG PWROG

Purpose of FAQ:

To detail the process for determining recovery actions (as defined in NFPA 805 Section 1.6.52) required for compliance with NFPA 805 Chapter 4.

Is this Interpretation of guidance? Yes / No

Proposed new guidance not in NEI 04-02? Yes / No

Details:

NEI 04-02 guidance needing interpretation (include section, paragraph, and line numbers as applicable):

NEI 04-02 currently addresses the transition of Operator Manual Actions (OMAs) to recovery actions in the following sections:

- 4.3.2 Nuclear Safety Performance Criteria
- B.2.2.4 Recovery Actions

This guidance requires clarification with respect to the following:

- Differentiation between recovery actions and activities that take place in the main control room or at primary control station(s)
- Determination of the population of recovery actions required in the licensee’s NFPA 805 fire protection program
- Evaluation of the additional risk presented by the use of recovery actions
- Evaluation of the feasibility of the recovery actions
- Evaluation of the reliability of the recovery actions

Circumstances requiring guidance interpretation or new guidance:

Background

NFPA 805 Section 1.6.52 Recovery Action defines a recovery action as:

“Activities to achieve the nuclear safety performance criteria that take place outside the main control room or outside the primary control station(s) for the equipment being operated, including the replacement or modification of components.”

NFPA 805 Section 4.2.3.1 states:

FAQ Title **Establishing Recovery Actions**

“One success path of required cables and equipment to achieve and maintain the nuclear safety performance criteria without the use of recovery actions shall be protected by the requirements specified in either 4.2.3.2, 4.2.3.3, or 4.2.3.4, as applicable. Use of recovery actions to demonstrate availability of a success path for the nuclear safety performance criteria automatically shall imply use of the performance-based approach as outlined in 4.2.4.”

NFPA 805 Section 4.2.4 Performance-Based Approach states:

“When the use of recovery actions has resulted in the use of this approach, the additional risk presented by their use shall be evaluated.”

Regulatory Guide 1.205 Revision 1, provides the following guidance with respect to recovery actions

- Additional clarification is provided on the definition of recovery actions and primary control station(s) as defined in Section 1.6.52 of NFPA 805 and Regulatory Guide 1.205, Revision 1. (Section C.2.4)
- The additional risk associated with the use of a recovery action should be reported to the NRC as part of the License Amendment Request (LAR). (Section C.2.4 and C.2.2.4.1)
- Previously approved OMAs that are required to demonstrate the availability of a success path for the nuclear safety performance criteria will require determination of additional risk but do not have to meet the acceptance criteria of RG 1.174. This additional risk will be part of the total risk change and may limit or preclude use of the fire risk evaluation performance-based method for VFDRs or recovery actions that were not previously approved. (RG 1.205 Revision 1 Section C.2.2.4.1)

The pilot process determined that there is a need to:

- Differentiate between recovery actions and activities that take place in the main control room or at primary control station(s).
- Establish the methodology used to assess the additional risk presented by the use of the recovery actions required to demonstrate the availability of a success path for the nuclear safety performance criteria.
- Establish the feasibility requirements for recovery actions.
- Establish the methodology used to assess the reliability of recovery actions.

Detail contentious points if licensee and NRC have not reached consensus on the facts and circumstances:

None

FAQ Number 07-0030 FAQ Revision 5

FAQ Title Establishing Recovery Actions

Potentially relevant existing FAQ numbers:

| FAQ | Rev | Subject | Closure Memo |
|----------|-----|---|--------------|
| 06-0011* | 2 | Clarify III.G.3 Compliance Transition | ML080300121 |
| 06-0012* | 5 | Clarify Manual Action Transition in Appendix B | ML072340368 |
| 08-0054 | 1 | Demonstrating Compliance with Chapter 4 of NFPA 805 | |

*FAQ 06-0011 was superseded by RG 1.205 Revision 1. This FAQ supersedes the guidance provided in FAQ 06-0012 Revision 5.

Response Section:

Proposed resolution of FAQ and the basis for the proposal:

If appropriate, provide proposed rewording of guidance for inclusion in the next Revision:

See revisions to NEI 04-02 Sections 4.3.2 and B.2.2.4 below. Please note that these revisions reflect guidance provided in RG 1.205 Revision 1 (ML092730314).

4.3.2 Nuclear Safety Performance Criteria Transition Review

...Operator manual actions in the pre-transition fire protection program should be evaluated to determine those that meet the definition of recovery action in NFPA 805 Section 1.6.52 and will be required to demonstrate compliance with NFPA 805. The licensee will also identify any new recovery actions that are required to resolve VFDRs (to meet the risk or defense-in-depth criteria).

Recovery actions to demonstrate the availability of a success path for the nuclear safety performance criteria preclude the use of the deterministic approach in the fire area, as stated in NFPA 805 Section 4.2.3. A performance-based approach (fire modeling or fire risk evaluation) must be used. See Appendix B Section B.2.3 of this document for additional guidance.

[Replace Section B.2.2.4 in its entirety]

B.2.3 Recovery Actions

Background

NFPA 805 Section 1.6.52 Recovery Action defines a recovery action as:

“Activities to achieve the nuclear safety performance criteria that take place outside the main control room or outside the primary control station(s) for the equipment being operated, including the replacement or modification of components.”

NFPA 805 Section 4.2.3.1 states:

“One success path of required cables and equipment to achieve and maintain the nuclear safety performance criteria without the use of recovery actions shall be protected by the requirements specified in either 4.2.3.2, 4.2.3.3, or 4.2.3.4, as applicable. Use of recovery actions to demonstrate availability of a success path for the nuclear safety performance criteria automatically shall imply use of the performance-based approach as outlined in 4.2.4.”

NFPA 805 Section 4.2.4 Performance-Based Approach states:

“When the use of recovery actions has resulted in the use of this approach, the additional risk presented by their use shall be evaluated.”

Regulatory Guide 1.205, provides the following guidance with respect to recovery actions

- Previously approved OMAs that are required to demonstrate the availability of a success path for the nuclear safety performance criteria will require determination of additional risk but do not have to meet the acceptance criteria of RG 1.174. This additional risk will be part of the total risk change and may limit or preclude use of the fire risk evaluation performance-based method for VFDRs or recovery actions that were not previously approved. RG 1.205 Revision 1 Section C.2.2.4 provides guidance on calculating the additional risk.

FAQ Title Establishing Recovery Actions

- The additional risk associated with the use of a recovery action should be reported to the NRC as part of the License Amendment Request (LAR). RG 1.205 Section C.2.2.4 provides guidance on calculating the additional risk.
- There are two cases where operator actions taken outside the main control room may be considered as taking place at primary control station(s). Guidance for this determination is included in RG 1.205 Section C.2.4.

The discussion below provides the methodology used to determine recovery actions required for compliance (i.e., determining the population of post-transition recovery actions). The methodology consists of the following steps:

- Step 1: Clearly define the primary control station(s) and determine which pre-transition OMAs are taken at primary control station(s) (Activities that occur in the Main Control Room are not considered pre-transition OMAs). Activities that take place at primary control station(s) or in the Main Control Room are not recovery actions, by definition.
- Step 2: Determine the population of recovery actions that are required to resolve VFDRs (to meet the risk acceptance criteria or maintain a sufficient level of defense-in-depth).
- Step 3: Evaluate the additional risk presented by the use of recovery actions required to demonstrate the availability of a success path
- Step 4: Evaluate the feasibility of the recovery actions
- Step 5: Evaluate the reliability of the recovery actions

The details associated with these steps and the results of their implementation are provided below.

Step 1 - Clearly define the primary control station(s) and determine which pre-transition OMAs are taken at primary control station(s)

The first task in the process of determining the post-transition population of recovery actions is to apply the NFPA 805 definition of recovery action and the RG 1.205 definition of primary control station to determine those activities that are taken at primary control station(s).

Section 1.6.52 of NFPA 805 provides the following definition of recovery action:

***“Recovery Action.** Activities to achieve the nuclear safety performance criteria that take place outside of the main control room or outside of the primary control station(s) for the equipment being operated, including the replacement or modification of components.”*

Based on this definition, activities that take place inside the main control room or at primary control station(s) are not considered recovery actions. Primary control station(s) is defined as follows in RG 1.205 Section C.2.4:

“There are two cases where operator actions taken outside the main control room may be considered as taking place at a primary control station. These two cases involve dedicated shutdown or alternative shutdown controls, which have been reviewed and approved by the NRC. In either case, the location or locations become primary when command and control is shifted from the main control room to these other locations. For these two cases, the

FAQ Title **Establishing Recovery Actions**

operator actions are not considered recovery actions, even if they are necessary to achieve the nuclear safety performance criteria.

- a. The first case involves the controls for a system or component specifically installed to meet the “dedicated shutdown” option in Section III.G.3 of Appendix R. Operation of this equipment is considered as taking place at a primary control station. A system or component that has been specifically installed under the dedicated shutdown concept is a system or component that is operated from a location outside the control room and is fully separated from the fire area where its use is credited. These systems or components cannot be operated from the control room. Operation of dedicated shutdown equipment would not be considered a recovery action, since this would be the primary control station.*
- b. The second case involves controls for systems and components that have been modified to meet the “alternative shutdown” option in Section III.G.3 of Appendix R, to provide independence and electrical separation from the control room to address a fire-induced control room evacuation. These alternative shutdown controls may be considered the primary control station, provided that, once enabled, the systems and equipment controlled from the panel are independent and electrically separated from the fire area, and the additional criteria below are met.*
 - (1) The location should be considered the primary command and control center when the main control room can no longer be used. The control room team will evacuate to this location and use its alternative shutdown controls to safely shut down the plant.*
 - (2) The location should have the requisite system and component controls, plant parameter indications, and communications so that the operator can adequately and safely monitor and control the plant using the alternative shutdown equipment.*
 - (3) More than one component should be controlled from this location (a local control station provided to allow an individual component to be locally controlled, as in the local handwheel on a motor-operated valve, does not meet this definition).”*

In addition to the above, actions that are necessary to activate or switch over to a primary control station(s) may be considered as taking place at primary control station(s) under the following conditions:

- The actions are limited to those necessary to activate, turn on, power up, transfer control or indication, or otherwise enable the primary control station(s) and make it capable of fulfilling its intended function following a fire. These actions must be related to the alternative/dedicated shutdown function and should take place in locations common to panels that perform the transfer of control. For example, switches that disable equipment in order to allow the alternative/dedicated shutdown location to function would be included as part of the primary control station. However, these actions must be in the same location(s) (panel or the local vicinity surrounding the panel) as the normal/isolation switches and may include de-energization of selected equipment and/or circuits (if such actions are similar to the use of isolation switches). This does not include additional actions in the plant that, while necessary to achieve the NSPC, are not

FAQ Title **Establishing Recovery Actions**

part of enabling the primary control station(s) (e.g., controlling inventory by locally controlling valve(s)).

- The actions are feasible and take place in sufficient time to allow the primary control station(s) to be used to perform the intended functions. The intended functions are defined as the original design criteria for the alternative/dedicated shutdown location(s) as provided in Generic Letter 86-10, Enclosure 2, Question 5.3.10 and Section 5.4.1 of RG 1.189, Revision 2.
- The switches or other equipment being operated to transfer control to the primary control station(s) are free from fire damage and the operators are able to travel from the main control room to the transfer location(s) and on to the primary control station(s) without being impeded by the fire.

The actions taken in the process of abandoning a control room and transferring to a primary control station(s) do not meet the definition of a recovery action subject to the conditions above since they are also considered as taking place at the primary control station(s). Conceptually, these actions are part of the primary control station(s) so the additional risk of their use does not need to be evaluated to demonstrate compliance with NFPA 805 Section 4.2.4.

Activities that occur in the main control room as a result of fire damage in the plant are compliant with NFPA 805 Section 4.2.3.1. Activities at the primary control station(s), including transition activities, are also compliant with NFPA 805 Section 4.2.3.1.

RG 1.205 Section C.2.4 included a stipulation that the dedicated or alternative shutdown strategy being considered as a primary control station(s) must be previously reviewed and approved by the NRC. Licensees may make modifications to their previously approved strategy or propose the use of a new primary control station(s) strategy that has not been previously approved.

If the licensee proposes to make modifications to their previously approved strategy, the licensee must provide a detailed description of the modification to the dedicated or alternative shutdown strategy sufficient for the staff to verify that the strategy meets the attributes provided in Section C.2.4 (electrical independence, command and control, instrumentation, actions necessary to enable (if required), etc.). In addition, provide sufficient design information to assure that connections/interconnections with safety-related plant systems will not cause a reduction in the capability, redundancy, diversity or design margin for those systems.

If the licensee proposes the use of a new primary control station(s) strategy, there are two options for obtaining NRC staff approval of the new primary control station(s).

Option 1 is to design and install a primary control station(s) in accordance with the guidance and requirements of the existing FP licensing basis (either Appendix R for a pre-1979 plant or NUREG 0800, Chapter 9.5.1, BTP 9.5-1 for post-1979 plants) and obtain NRC staff approval as part of the NFPA 805 license amendment (note that this process essentially makes a primary control station previously approved by the staff). In accordance with RG 1.205, Revision 1, no delta risk evaluation would be required since the NRC staff will have previously approved the primary control station(s) as part of the NFPA 805 license amendment.

Option 2 is to develop the design and analyze primary control station(s) using the performance-based approach and provide the necessary evaluation (e.g., fire modeling; fire risk evaluation).

If a licensee selects option 1, the following information should be provided to facilitate the NRC staff's review of the proposed primary control station(s):

1. A complete description of the proposed primary control station(s):
 - a. Including how primary control station(s) interfaces with existing plant systems, structures and components,
 - b. Sufficient design drawings to fully describe proposed primary control station(s) (Plant layout drawings, electrical one-line and elementary drawings, and piping and instrumentation diagrams as necessary),
 - c. In addition, provide sufficient design information to assure that connections/interconnections with safety-related plant systems will not cause a reduction in the capability, redundancy, diversity or design margin for those systems.
2. A discussion of how proposed primary control station(s) meets the existing licensing basis requirements for Alternative/Dedicated Shutdown.
3. A copy of the procedure(s) to be used to enable primary control station(s) as well as the procedure(s) used at the primary control station to control the plant.
4. A discussion of how the fire area where primary control station(s) will be credited meets the NFPA 805 requirements for defense-in-depth and safety margins.

Results of Step 1:

Based on the definition provided in RG 1.205, and the additional guidance above, the licensee should define those locations considered the primary control station(s) and provide the basis (i.e., show how the applicable criteria above are met). This information should be included in Attachment G of the Transition Report. For example

- List location(s) considered the primary control station(s). If multiple panels were previously approved for alternative/dedicated shutdown provide documentation.
- List location(s)/activities necessary to enable primary control station(s). As necessary, provide documentation of prior approval of activities required to enable the alternative/dedicated shutdown strategy.

Additionally, Table G-2 - Recovery Actions and Activities Occurring at the Primary Control Station(s) should identify the activities that occur at the primary control station(s). Activities necessary to enable the primary control station(s) should also be identified in Table G-2 as primary control station(s) activities. These activities do not require the treatment of additional risk.

Step 2 - Determine the population of recovery actions that are required to resolve VFDRs (to meet the risk or defense-in-depth criteria)

On a fire area basis all VFDRs should be identified in the B-3 Table (See Section B.2.2 of this document). Each VFDR not brought into compliance with the deterministic approach should be evaluated using the performance-based approach of NFPA 805 Section 4.2.4. The performance-based evaluations may result in the need for a recovery action to meet the acceptance criteria (risk acceptance criteria or the defense-in-depth acceptance criteria).

Results of Step 2:

The final set of recovery actions should be provided in the Transition Report in Table G-2 - Recovery Actions and Activities Occurring at the Primary Control Station(s).

Step 3: Evaluation of the Additional Risk of the Use of Recovery Actions

NFPA 805 Section 4.2.3.1 does not allow recovery actions when using the deterministic approach to meet the nuclear safety performance criteria. However, the use of recovery actions is allowed by NFPA 805 using a risk informed, performance-based, approach, provided that the additional risk presented by the recovery actions has been evaluated by the licensee in accordance with NFPA 805 Section 4.2.4.

Section 4.2.4 of NFPA 805 (2001) states:

“4.2.4 Performance-Based Approach. This subsection shall provide for a performance-based alternative to the deterministic approach provided in 4.2.3. When the use of recovery actions has resulted in the use of this approach, the additional risk presented by their use shall be evaluated. When the fire modeling or other engineering analysis, including the use of recovery actions for nuclear safety analysis, is used, the approach described in 4.2.4.1 shall be used. When fire risk evaluation is used, the approach described in 4.2.4.2 shall be used.”*

The explanatory material in Appendix A to NFPA 805 states:

“A.4.2.4 Where recovery actions are the primary means to recover and re-establish any of the nuclear safety performance criteria (e.g., inventory and pressure control; decay heat removal), in lieu of meeting the deterministic approach as specified by 4.2.3, risk can be increased. The risk for the fire area and the risk presented by the implementation of recovery actions to recover the nuclear safety function should be compared to the risk associated with maintaining the function free of fire damage in accordance with the deterministic requirements specified in Chapter 4. Additional fire protection systems and features might have to be provided in the fire area to balance the risk.”

RG 1.205 provides the following guidance in Section C.2.4:

“Use of recovery actions, as defined in NFPA 805, Section 1.6.52, to demonstrate the availability of a success path for the nuclear safety performance criteria, does not meet the deterministic requirements in Section 4.2.3 of NFPA 805. Consequently, the licensee must address recovery actions, whether or not previously approved by the NRC, using the performance-based methods in Section 4.2.4, as required by NFPA 805, Section 4.2.3.1, and must evaluate the additional risk of their use according to NFPA 805, Section 4.2.4. Regulatory Position 2.2.4 provides guidance on calculating this additional risk of recovery actions.

NFPA 805, Section 4.2.3.1, identifies recovery actions for which the additional risk must be evaluated, as required by NFPA 805, Section 4.2.4. These “success path” recovery actions are operator actions that, if not successful, would lead to the fire-induced failure

FAQ Title **Establishing Recovery Actions**

of the “one success path of required cables and equipment to achieve and maintain the nuclear safety performance criteria.” Other operator actions that do not involve the success path may be credited in plant procedures or the fire PRA to overcome a combination of fire-induced and random failures may also be recovery actions, but licensees do not need to evaluate the additional risk of their use.”

Based on NFPA 805 Sections 4.2.3.1 and 4.2.4 and RG 1.205 Section C.2.4, the additional risk presented by the use of recovery actions required to demonstrate the availability of a ‘success path’ shall be evaluated. These ‘success path’ recovery actions are operator actions that, if not successful, would lead to the fire-induced failure of the “one success path of required cables and equipment to achieve and maintain the nuclear safety performance criteria.” Therefore:

- Activities that occur in the main control room as a result of fire damage in the plant are compliant with NFPA 805 Section 4.2.3.1 and do not require an evaluation of the additional risk of their use.
- Activities at primary control station(s), including activities to enable or activate the primary control station(s) meeting the criteria set forth in Step 1, are free of fire damage from the primary control station are compliant with NFPA 805 Section 4.2.3.1 and do not require an evaluation of the additional risk of their use.
- Actions taking place outside the main control room that are modeled in the PRA but are not involved with demonstrating the availability of a success path to meet the Nuclear Safety Performance Criteria are not considered recovery actions requiring the evaluation of additional risk required by NFPA 805 Section 4.2.4.

The additional risk of a recovery action can be evaluated using one of the following processes:

- Calculate the CDF (LERF) associated with the VFDR that resulted in the need for the recovery action. Subtract the CDF (LERF) obtained by eliminating the VFDR in the PRA model to create a compliant case. This gives the Δ CDF and Δ LERF associated with VFDR and represents the additional risk associated with the use of recovery action in lieu of providing a deterministic resolution.
- Model the recovery action explicitly in the Fire PRA, with an appropriate human error probability and calculate the CDF (LERF). Subtract the CDF (LERF) obtained by eliminating the VFDR in the PRA model to create a compliant case. This gives the Δ CDF and Δ LERF associated with performing the action compared to providing a deterministic resolution.
- Report the applicable portion of the CDF/LERF (scenario or group of scenarios) for the fire area as a surrogate for the change in risk.
- Perform fire modeling in accordance with NFPA 805 Section 4.2.4.1 to demonstrate that the risk of the recovery action compared to deterministic compliance is negligible.

The total increase or decrease in risk associated with recovery actions should be consistent with the guidelines of RG 1.174. RG 1.205 Section 2.2.4.2 states:

“The total increase or decrease in risk associated with the implementation of NFPA 805 for the overall plant should be calculated by summing the risk increases and decreases for each

fire area (including any risk increases resulting from previously approved recovery actions). The total risk increase should be consistent with the acceptance guidelines in Regulatory Guide 1.174. Note that the acceptance guidelines of Regulatory Guide 1.174 may require the total CDF, LERF, or both, to evaluate changes where the risk impact exceeds specific guidelines. If the additional risk associated with previously approved recovery actions is greater than the acceptance guidelines in Regulatory Guide 1.174, then the net change in total plant risk incurred by any proposed alternatives to the deterministic criteria in NFPA 805, Chapter 4 (other than the previously approved recovery actions), should be risk-neutral or represent a risk decrease.”

RG 1.205 provides guidance on the evaluation of additional risk of previously approved recovery actions in Section C.2.2.4.1. Additional risk of recovery actions determined to be required during the transition to NFPA 805 (new actions identified as part of transition or pre-transition OMAs that were not previously approved) becomes part of the transition risk.

In addition to the evaluation of risk presented by the use of recovery actions per Section 4.2.4 of NFPA 805, additional reviews should be performed to determine those activities that could have an adverse impact on plant risk. If activities (recovery actions or other actions in the post-fire operational guidance) are determined to have an adverse risk impact, they should be resolved during NFPA 805 implementation via an alternate strategy that eliminates the need for the action in the NSCA.

Results of Step 3:

The set of recovery actions that are necessary to demonstrate the availability of a success path for the nuclear safety performance criteria (See Table G-2) should be evaluated for additional risk using the process described above and compared against the guidelines of RG 1.174 and RG 1.205. The additional risk should be provided in Attachment W of the LAR.

A discussion of the results of the review of activities for an adverse impact on risk should be presented in Attachment G of the LAR.

Step 4: Evaluation of the Feasibility of Recovery Actions

Recovery actions should be evaluated against the feasibility criteria shown below in Table B-TBD. Note that since actions taken at the primary control station are not recovery actions their feasibility is evaluated in accordance with procedures for validation of off normal procedures.

Table B-TBD
Feasibility Criteria – Recovery Actions

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- | | |
|----------------------------------|---|
| 1 Demonstrations | The proposed recovery actions should be verified in the field to ensure the action can be physically performed under the conditions expected during and after the fire event. |
| 2 Systems and Indications | Consider availability of systems and indications essential to perform the recovery action. |
| 3 Communications | The communications system should be evaluated to determine the availability of communication, where required for coordination of recovery actions. |
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Table B-TBD
Feasibility Criteria – Recovery Actions

| | |
|-----------|---|
| 4 | Emergency Lighting The lighting (fixed and/or portable) should be evaluated to ensure sufficient lighting is available to perform the intended action. |
| 5 | Tools-Equipment Any tools, equipment, or keys required for the action should be available and accessible. This includes consideration of SCBA and personal protective equipment if required. (This includes staged equipment for repairs). |
| 6 | Procedures Written procedures should be provided. |
| 7 | Staffing Walk-through of operations guidance (modified, as necessary, based on the analysis) should be conducted to determine if adequate resources are available to perform the potential recovery actions within the time constraints (before an unrecoverable condition is reached), based on the minimum shift staffing. The use of essential personnel to perform actions should not interfere with any collateral industrial fire brigade or control room duties. |
| 8 | Actions in the Fire Area When recovery actions are necessary in the fire area under consideration or require traversing through the fire area under consideration, the analysis should demonstrate that the area is tenable and that fire or fire suppressant damage will not prevent the recovery action from being performed. |
| 9 | Time Sufficient time to travel to each action location and perform the action should exist. The action should be capable of being identified and performed in the time required to support the associated shutdown function(s) such that an unrecoverable condition does not occur. Previous action locations should be considered when sequential actions are required. |
| 10 | Training Training should be provided on the post-fire procedures and implementation of the recovery actions. |
| 11 | Drills Periodic drills that simulate the conditions to the extent practical (e.g., communications between the control room and field actions, the use of SCBAs if credited, the appropriate use of operator aids). |

Results of Step 4:

Each of the criteria in B-TBD should be assessed for the recovery actions listed in Table G-2 of the LAR. The results of the feasibility review along with any items requiring closure during the implementation period should be documented in Attachment G and Attachment S of the LAR.

Step 5: Evaluation of the Reliability of Recovery Actions

The evaluation of the reliability of recovery actions depends upon its characterization.

- The reliability of recovery actions that are modeled specifically in the Fire PRA should be addressed using Fire PRA methods (i.e., HRA).
- The reliability of recovery actions not modeled specifically in the Fire PRA is bounded by the treatment of additional risk associated with the applicable VFDR. In calculating the additional risk of the VFDR, the compliant case recovers the fire-induced failure(s) as if the variant condition no longer exists. The resulting delta risk between the variant and compliant condition bounds any additional risk for the recovery action even if that recovery action were modeled.

FAQ Number 07-0030 FAQ Revision 5

FAQ Title Establishing Recovery Actions

Results of Step 5:

A discussion of the results of the reliability evaluation should be provided in Attachment G of the LAR.

FAQ Number 07-0030 FAQ Revision 5

FAQ Title Establishing Recovery Actions

Table G-2 Recovery Actions and Activities Occurring at the Primary Control Station(s)

| Fire Area | Component | Component Description | Actions | VFDR | RA/PCS |
|-----------|-----------|-----------------------|---------|------|--------|
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