

FAQ Number 06-0012 Revision 5

FAQ Title Determining Manual Actions that Require a Change Evaluation during Transition

Plant: Harris Nuclear Plant

Date: 11/26/07

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Purpose of FAQ:

Operator manual actions that are either not allowed under the current regulatory framework or for which there is no previous NRC approval are not compliant with current regulations. The acceptability of the continued use of the actions that are not compliant will be evaluated using the change process. The purpose of this FAQ is to clarify the operator manual actions that will require change evaluations during the transition to NFPA 805.

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):

Section B.2.2.4 Recovery Actions

Circumstances requiring guidance interpretation or new guidance:

Operator manual actions that are currently credited in Appendix R (NUREG 0800) analyses may be allowed under the current regulation/guidance or may have been approved via an exemption/deviation. These operator manual actions do not require a change evaluation during the transition process.

Subsequent to the submittal of FAQ 06-0001, the following documents were issued by the NRC:

- 2006-05-26 - Public Meeting Notice 20060609 on Manual Action Clarifications ML061390156
- 2006-05-26 - Draft NRC Response to 05-03-06 NEI letter - ML061440251
- 2006-05-26 - Draft NRC Response to 03-29-06 EPM letter - ML061440237

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- 2006-06-30 - RIS 2006-10 Regulatory Expectations With Appendix R Paragraph III.G.2 Operator Manual Actions – ML061650389
- 2006-07-19 - NRC Meeting Summary of 06-09-06 OMA Meeting ML061950327
- 2006-07-19 - NRC Revision to Draft Response to EPM March 2006 letter - ML061980016
- 2006-07-19 - NRC Revision to Draft Response to NEI May 2006 letter - ML061980035

In addition the NRC letter to NEI, Use of Manual Actions to Achieve Safe Shutdown for Fire Events, dated 2002-05-16 (ML021410026) provides information not captured in the correspondence above.

These documents provide additional clarification with respect to the acceptability of existing operator manual actions.

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

None.

Potentially relevant existing FAQ numbers:

This FAQ supersedes FAQ 06-0001.

Response Section:

Proposed resolution of FAQ and the basis for the proposal:

The following information will be used as input for a revision to NEI 04-02:

- Allowed Operator Manual Actions
“With proper analysis, manual actions are allowed for fire safe shutdown activities under the following circumstances:
 - *operation of equipment for which cables are located in fire areas that meet Section III.G.1 of Appendix R to 10 CFR Part 50, by having redundant cables and equipment in a completely different fire area*
 - *manual operation of normally operated manual switches and valves*
 - *staff-approved deviations and exemptions for specific manual actions in lieu of meeting the criteria of Section III.G.2 of Appendix R to 10 CFR Part 50*
 - *manual operation of equipment used to meet the requirements of Section III.G.3 for Alternative or Dedicated Shutdown of Appendix R to 10 CFR Part 50, where meeting performance criteria of Section III.L is required”*

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(NRC Letter to NEI dated May 16, 2002, Use of Manual Actions to Achieve Safe Shutdown for Fire Events)

- Operator Manual Actions on 'Fire Affected Train'.
"As discussed during a March 1, 2006, public meeting, if one of the redundant trains in the same fire area is free of fire damage by one of the specified means in paragraph III.G.2, then the use of operator manual actions, or other means necessary, to mitigate fire-induced operation or maloperation to the second train may be considered in accordance with the licensee's fire protection program and license condition since paragraph III.G.2 has been satisfied."(RIS 2006-10)

Additional clarification was provided at the June 9, 2006 Public Meeting and was summarized in a subsequent NRC Internal Memorandum (July, 19, 2006 ML061950327, ML061980016)

Clarification was also provided in the NRC's comments on Rev. 4 of FAQ 06-0012 (September 20, 2007 ML072820168).

- Conversion of Compliance Strategy from III.G.2 to III.G.3.
"Paragraph III.G.2 allows the licensee to use the alternative shutdown method described in paragraph III.G.3 of Appendix R if the licensee cannot meet the requirements of paragraph III.G.2."(RIS 2006-10)
- Exemptions from Paragraph III.G.2 for Plants Licensed to Operate Before January 1, 1979
"The regulations in 10 CFR Part 50.48(b) impose the requirements of paragraph III.G.2 of Appendix R on plants licensed to operate before January 1, 1979 (pre-1979 licensees). As originally issued, 10 CFR 50.48, "Fire Protection," allowed licensees to request an exemption from compliance with one or more of the provisions of Appendix R if the licensee justified the exemption on the basis that the required modifications would not enhance fire protection safety in the facility or that the modifications might be detrimental to overall facility safety.

The staff's current basis for approving an exemption is provided in 10 CFR 50.12 "Specific Exemptions." In order for the NRC to approve such an exemption request, a licensee would have to identify all relevant credited operator manual actions by fire area or fire scenario.

The NRC has reviewed and granted exemption requests for the use of operator manual actions in lieu of the separation criteria of paragraph III.G.2 where the exemption criteria were met. These exemptions are specific to the licensee and the situation discussed in the exemption. Exemptions granted for specific conditions cannot be applied under other conditions. Although the rationale for an exemption may appear to be applicable to a similar situation for a second

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licensee, the staff cautions that NRC review and approval by issuance of an exemption would be necessary for the second licensee.

The appropriate regulatory vehicle (in the absence of a rulemaking or plant-specific Order) to provide dispensation from compliance with fire protection requirements is the issuance of an exemption under 10 CFR Part 50.12. Inspection reports, meeting minutes, and letters from licensees are examples of documents that do not provide dispensation from compliance with applicable fire protection requirements.

For pre-1979 licensees, a staff decision in a safety evaluation report (SER) that approves the use of operator manual actions, in lieu of one of the means specified in paragraph III.G.2, does not eliminate the need for an exemption. Pre-1979 licensees who have SERs, but not a corresponding exemption, which approve manual actions should request an exemption under 10 CFR Part 50.12, citing the special circumstances of section 50.12(a)(2)(ii), citing the SER as the safety basis, and confirming that the safety basis established in the SER remains valid. The staff expects to grant the exemption on these bases without further review. "(RIS 2006-10)

- **Plants Licensed to Operate After January 1, 1979**

"Since plants licensed to operate on or after January 1, 1979 (post-1979 licensees), are not required to meet the requirements of paragraph III.G.2, a staff decision in an SER that approves the use of manual operator actions does not require exemption under 10 CFR 50.12. Post-1979 licensees may be requested to demonstrate, as part of the NRC Reactor Oversight Process, that the use of an operator manual action would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire consistent with their license." (RIS 2006-10)

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

Revise NEI 04-02 as shown in the attachment. Note: Figure numbers (i.e., B-4 through B-6) assume that the previous Figures B-1 through B-3 will be incorporated as part of FAQ 06-0004.

**Attachment to FAQ 06-0012 Revision 5
Excerpt from NEI 04-02 Revision 1 with Changes Tracked**

[Fifth paragraph on page 29 of NEI 04-02 Revision 1]

4.3.2 Nuclear Safety Performance Criteria Transition Review

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Operator mManual actions (~~credited for III.G.2 compliance~~) being transitioned to recovery actions that are not allowed under the current regulatory framework or do not have previous NRC approval should be evaluated using the change process. See Appendix B-2 of this document for additional guidance.

**Attachment to FAQ 06-0012 Revision 5
Excerpt from NEI 04-02 Revision 1 with Changes Tracked**

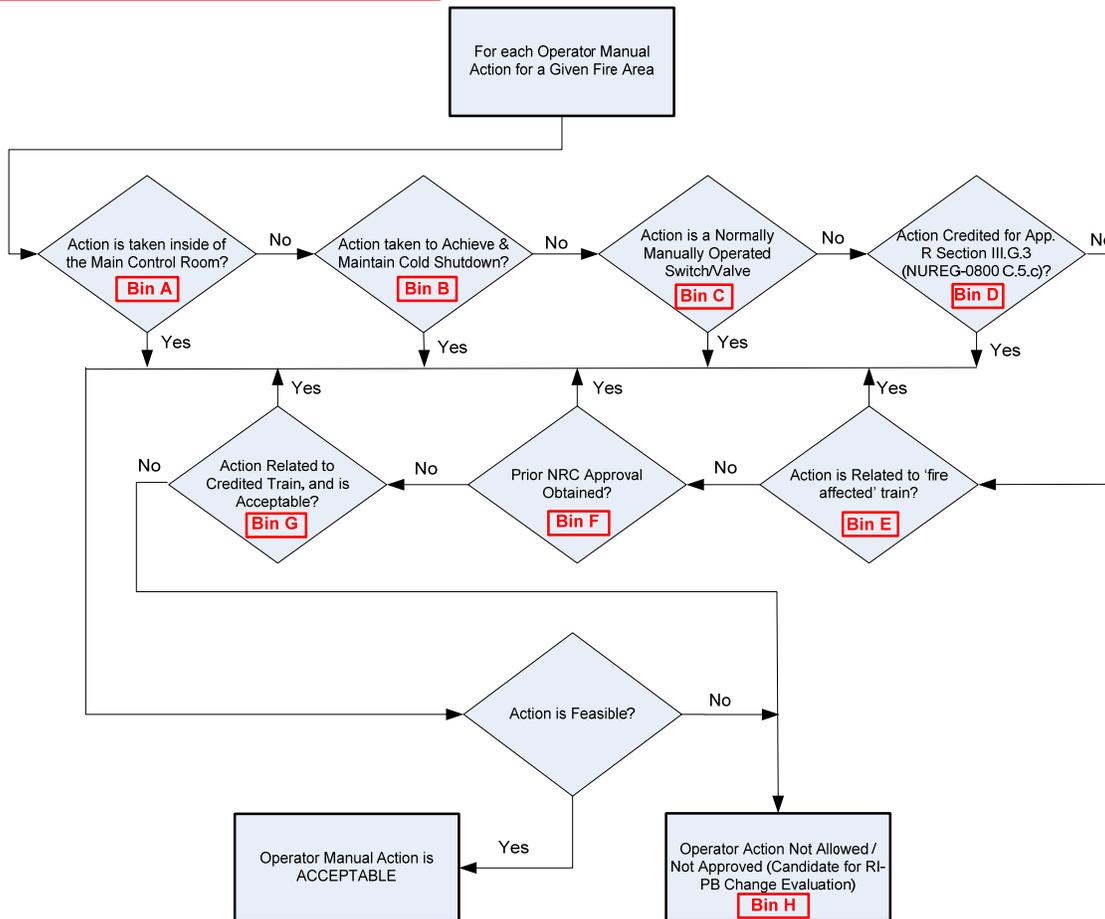
B.2.2.4 Recovery Actions

Operator ~~m~~Manual actions will be transitioned as “recovery actions” in the new NFPA 805 licensing bases. Repairs will also be transitioned as “recovery actions”.

The following information for operator manual actions ~~that~~ should be included in the fire area summaries for the fire area (and referenced as appropriate in Table B-3 Fire Area Assessment Worksheet) is:

- ~~W1) whether the~~ transitioning operator recovery manual actions is allowed or were was previously reviewed and approved by the NRC’s Office of Nuclear Reactor Regulation (NRR). Include, and 2) reference to documentation that demonstrates prior review and approval by the NRC.
- Reference to the feasibility evaluation of the transitioning recovery action. See discussion below.
- Reference to the evaluation of additional risk associated with the use of recovery actions. See section discussion below.

Figure B-4 depicts this general process for determining whether a transitioning operator manual action to NFPA 805 recovery action requires a change evaluation. The ‘bin’ identifiers are for ease of reference.



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Figure B-4 General Process to Transition Operator Manual Actions

Determining If a Transitioning Operator Manual Action requires a Change Evaluation

Operator manual actions that are allowed and/or have been previously reviewed and approved by the NRC (as documented in an approved exemption/deviation/safety evaluation report) can be transitioned without the need to use the change evaluation process. In some cases the previous approval may not be obvious, yet should be allowed. Examples of allowed operator manual actions are include:

- Operator manual operation from the control room or emergency control station(s) [Bin A]
- Repairs or operator manual actions credited either for transitioning to or maintaining cold shutdown equipment [Bin B]
- Manual operation of normally operated manual switches and valves where separation/protection is provided for redundant safe-shutdown trains in accordance with Section III.G.1 or III.G.2 of 10 CFR 50, Appendix R (or applicable sections of NUREG-0800) [Bin C]

NRC Letter to NEI dated May 16, 2002 states: “With proper analysis, manual actions are allowed for fire safe shutdown activities under the following circumstances:

- manual operation of normally operated manual switches and valves”
- Operator manual actions credited for compliance with Section III.G.3 of 10 CFR 50, Appendix R (or Section C.5.c of NUREG-0800). [Bin D]

NRC Letter to NEI dated May 16, 2002 states: “With proper analysis, manual actions are allowed for fire safe shutdown activities under the following circumstances:

- manual operation of equipment used to meet the requirements of Section III.G.3 for Alternative or Dedicated Shutdown of Appendix R to 10 CFR Part 50, where meeting performance criteria of Section III.L is required”

RIS 2006-10 states: “Paragraph III.G.2 allows the licensee to use the alternative shutdown method described in paragraph III.G.3 of Appendix R if the licensee cannot meet the requirements of paragraph III.G.2.”

- ~~The operator manual action is currently credited in the Alternate Shutdown Procedure. Although this manual action was NOT specifically mentioned in the SER, the licensee submittal specifically discussed the operator action. This can be considered previously approved~~
- ~~The operator manual action is currently credited in Non-Alternate Shutdown Procedure. The manual action was specifically discussed as acceptable in the SER~~

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~~however the NRC did not grant an exemption/deviation. This can be considered previously approved.~~

- ~~▪ Operation of equipment for which cables and equipment for the redundant safe shutdown train are located in separate fire areas thus meeting Section III.G.1 of Appendix R to 10 CFR Part 50;~~
- ~~▪ Manual operation of normally operated manual switches and valves where III.G.1 separation is provided for redundant safe shutdown trains~~
- Operation of fire affected equipment for fire areas that meet the separation requirements of Section III.G.1 of 10 CFR Part 50, Appendix R (or applicable sections of NUREG-0800). See Figure B-5. [Bin E]

NRC Letter to NEI dated May 16, 2002 states: “With proper analysis, manual actions are allowed for fire safe shutdown activities under the following circumstances:

- operation of equipment for which cables are located in fire areas that meet Section III.G.1 of Appendix R to 10 CFR Part 50, by having redundant cables and equipment in a completely different fire area”
- Operation of fire affected equipment for fire areas that meet the protection requirements of Section III.G.2 of 10 CFR 50, Appendix R (or applicable sections of NUREG-0800) for redundant trains. See Figure B-6. [Bin E]

RIS 2006-10 states: “As discussed during a March 1, 2006, public meeting, if one of the redundant trains in the same fire area is free of fire damage by one of the specified means in paragraph III.G.2, then the use of operator manual actions, or other means necessary, to mitigate fire-induced operation or maloperation to the second train may be considered in accordance with the licensee’s fire protection program and license condition since paragraph III.G.2 has been satisfied.”

- Operator manual actions to address spurious actuations that affect the credited safe shutdown success path may or may not be allowed, depending upon the affect of the fire on the safe shutdown components. [Bin G]

A special case of “fire affected train” exists where two redundant trains have components/cables in a given fire area, and both trains take suction from a common tank. In this case, a manual action would be allowed (and no change evaluation would be required) to secure the fire affected train, since the credited train is protected (meets III.G.2 requirements) even though the manual action would need to be accomplished before the common tank level decreased to the point where operation of the credited train would be affected. This is acceptable since the common point in the system is the tank, which is still free of fire damage (Figure B-7). This example was discussed in the June 9, 2006 public meeting. (ML061980016)

An example where operator manual action to address spurious actuations that affect the credited safe shutdown success path would not be allowed is the case where the credited function is to inject water to one of the Steam Generators (reactor) and a spurious actuation causes a diversion from the credited flow path. Even though the minimum required injection flow can be maintained and the operator manual action can be accomplished prior to the function being disabled, the operator manual action

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is not allowed and a change evaluation would be required since the credited train is not free of fire damage (the diversion of flow must be terminated at some point or the credited safe shutdown path will not be successful). (Figure B-8). An example of this configuration is BWR example 3 of the June 9, 2006 public meeting (ML061980016). This clarification of the ‘credited train not being free of fire damage’ was provided by the NRC on September 20, 2007. (ML072820168)

In addition to allowed operator manual actions some manual actions may have been previously reviewed and approved by the NRC [Bin F] (as documented in an approved exemptions/deviations/safety evaluation reports) and can also be transitioned without the need to use the change evaluation process. Guidance for determining previous approval is discussed in Section 2.3.1 and 4.3.2 of this document and in Regulatory Guide 1.205.

In some instances the NRC may have reviewed and approved [Bin F] an operator manual action in an SER without granting an exemption/deviation request. In these cases, change evaluations would not be required based on the following guidance:

- RIS 2006-10 states: “For pre-1979 licensees, a staff decision in a safety evaluation report (SER) that approves the use of operator manual actions, in lieu of one of the means specified in paragraph III.G.2, does not eliminate the need for an exemption. Pre-1979 licensees who have SERs, but not a corresponding exemption, which approve manual actions should request an exemption under 10 CFR Part 50.12, citing the special circumstances of section 50.12(a)(2)(ii), citing the SER as the safety basis, and confirming that the safety basis established in the SER remains valid. The staff expects to grant the exemption on these bases without further review.”

During the transition, for pre-1979 licensees who have SERs, but not a corresponding exemption, which approves operator manual actions, should verify that the basis for acceptability in the SER is still valid. If the basis for acceptability is still valid, then no change evaluation is required.

- RIS 2006-10 states: “Since plants licensed to operate on or after January 1, 1979 (post-1979 licensees), are not required to meet the requirements of paragraph III.G.2, a staff decision in an SER that approves the use of manual operator actions does not require exemption under 10 CFR 50.12. Post-1979 licensees may be requested to demonstrate, as part of the NRC Reactor Oversight Process, that the use of an operator manual action would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire consistent with their license.”~~operator~~

~~Repairs credited for cold shutdown equipment will also be transitioned on a fire area basis. Information that should be summarized includes reference to documentation that demonstrates the equipment necessary for the repair is staged, the repair is proceduralized, and the repair is achievable in the necessary timeframe.~~

~~Operator manual actions that have been previously reviewed and approved by the NRC (as documented in an approved SER) can be transitioned without the need to use the change evaluation process. However, licensees may consider use of the change evaluation process for previously reviewed and approved operator manual actions so that~~

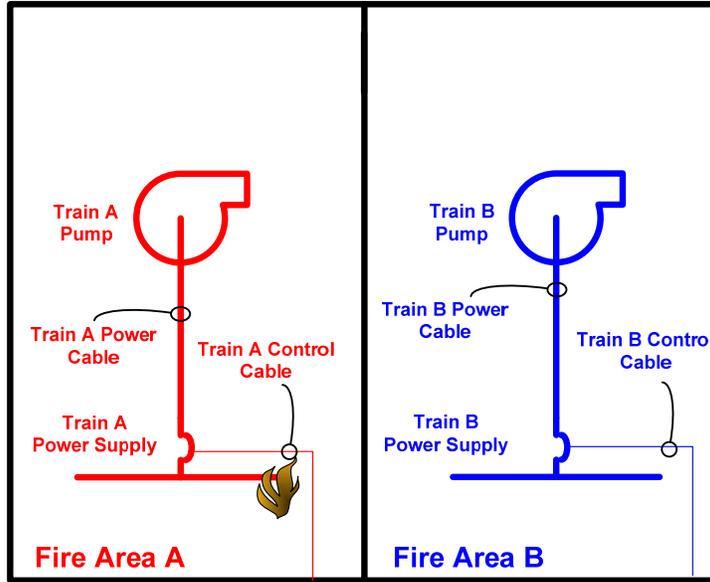
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~~the evaluation is consistent with operator manual actions not previously reviewed and approved by the NRC.~~

Operator manual actions ~~that (e.g., those credited for compliance with Appendix R sections III.G.2 and III.G.3) are not allowed or that~~ have not been previously reviewed and approved by the NRC should be addressed for acceptability using the change evaluation [Bin H] process outlined in Chapter 5.3 of this guidance. Examples of operator manual actions that are not allowed are provided in summary of the June 9, 2006 Public Meeting (ML061950327, ML061980016)

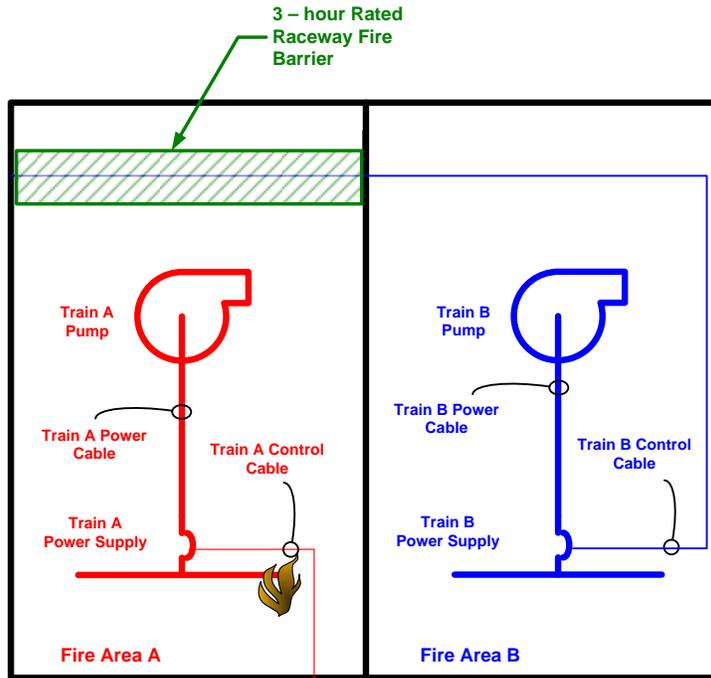
~~The following methodology should be used to optimize this process:~~

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Fire Area A and B meet the separation criteria of 10 CFR 50 Appendix R Section III.G.1. A postulated fire in Fire Area A could result in the spurious starting of the Train A pump, which can be mitigated by an operator manual action to de-energize the Train A Power Supply to stop Pump A.

Figure B-5 Allowed Operator Manual Action in Fire Area Meeting 10 CFR 50, Appendix R, Section III.G.1 Separation Criteria



Fire Area B meets the separation criteria of 10 CFR 50 Appendix R Section III.G.2.a. A postulated fire in Fire Area A could result in the spurious starting of the non-credited Train A pump, which can be mitigated by an operator manual action to de-energize the Train A Power Supply to stop Pump A. This is functionally equivalent to Case in Figure B-5.

Figure B-6 Allowed Operator Manual Action in Fire Area Meeting 10 CFR 50, Appendix R, Section III.G.2 Compliant – Operator Manual Action for Fire Affected Train

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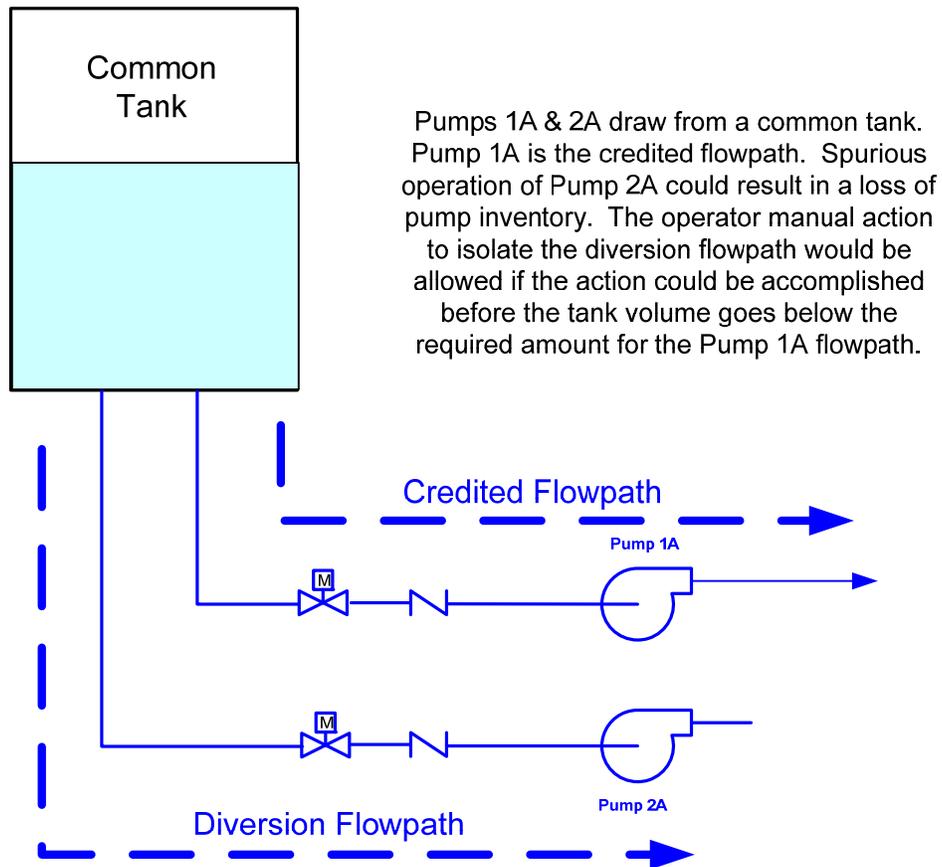


Figure B-7 Allowed Operator Manual Action – In Credited Success Path – Common Tank Suction

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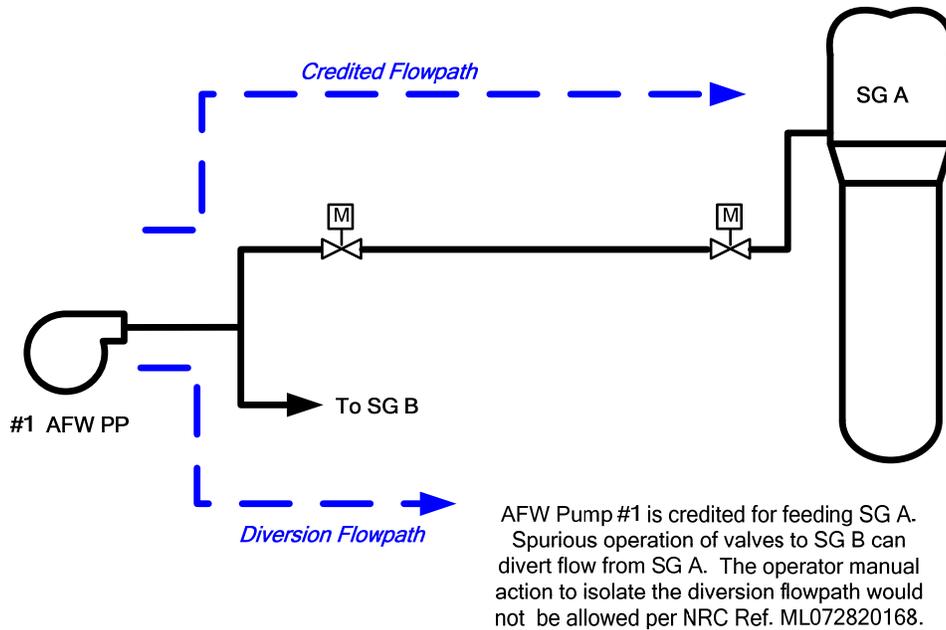


Figure B-8 Operator Manual Action – In Credited Success Path – Auxiliary Feedwater Flow Diversion [not allowed per NRC Ref. ML072820168]