

**NRC Final Response
FAQ 13-06 Dresden MSPI**

Plant:	<u>Dresden Units 2 & 3</u>		
Date of Event:	<u>5/22/12 & 6/10/12</u>		
Submittal Date:	<u>8/30/13</u>		
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Performance Indicator: **MSPI**

Site-Specific FAQ (Appendix D)? **No**

FAQ requested to become effective **when approved**.

Question Section

NEI 99-02 Guidance needing interpretation (include page and line citation):

Per NEI 99-02, Rev. 6 under Unplanned Unavailable Hours on page F-5:

“Unplanned unavailable hours: These hours include elapsed time between the discovery and the restoration to service of an equipment failure or human error (such as a misalignment) that makes the train unavailable. Time of discovery of a failed monitored component is when the licensee determines that a failure has occurred or when an evaluation determines that the train would not have been able to perform its monitored function(s). In any case where a monitored component has been declared inoperable due to a degraded condition, if the component is considered available, there must be a documented basis for that determination, otherwise a failure will be assumed and unplanned unavailability would accrue. If the component is degraded but considered operable, timeliness of completing additional evaluations would be addressed through the inspection process. **Unavailable hours to correct discovered conditions that render a monitored component incapable of performing its monitored function are counted as unplanned unavailable hours.** An example of this is a condition discovered by an operator on rounds, such as an obvious oil leak, that was determined to have resulted in the equipment being non-functional even though no demand or failure actually occurred. Unavailability due to mis-positioning of components that renders a train incapable of performing its monitored functions is included in unplanned unavailability for the time required to recover the monitored function.”

Per NEI 99-02, Rev. 6 under Planned Unavailable Hours on page F-5:

“Planned unavailable hours: These hours include time a train or segment is removed from service for a reason other than equipment failure or human error. **Examples of activities included in planned unavailable hours are preventative maintenance, testing, equipment modification, or any other time equipment is electively removed from service to correct a degraded condition that had not resulted in a loss of function.** Based on the plant history of previous three years, planned baseline hours for functional equipment that is electively removed from service but could not be planned in advance can be estimated and the basis documented. When used in the calculation of UAI, if the planned unavailable hours are less than the baseline planned unavailable hours, the planned unavailable hours will be set equal to the baseline value.”

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Per NEI 99-02, Rev. 6 under Train Unavailable Hours on page F-5:

“Train unavailable hours: The hours the train was not able to perform its monitored function while critical. Fault exposure hours are not included; unavailable hours are counted only for the time required to recover the train’s monitored functions. **In all cases, a train that is considered to be OPERABLE is also considered to be available.** Unavailability must be by train; do not use average unavailability for each train because trains may have unequal risk weights.”

Per NEI 99-02, Rev. 6 under Unavailability on page 31:

“Unavailability is the ratio of the hours the train/system was unavailable to perform its monitored functions (as defined by PRA success criteria and mission times) due to planned and unplanned maintenance or test during the previous 12 quarters while critical to the number of critical hours during the previous 12 quarters. (Fault exposure hours are not included; unavailable hours are counted only from the time of discovery of a failed condition to the time the train’s monitored functions are recovered.) Time of discovery of a failed monitored component is when the licensee determines that a failure has occurred or when an evaluation determines that the train would not have been able to perform its monitored function(s). **In any case where a monitored component has been declared inoperable due to a degraded condition, if the component is considered available, there must be a documented basis for that determination, otherwise a failure will be assumed and unplanned unavailability would accrue.** If the component is degraded but considered operable, timeliness of completing additional evaluations would be addressed through the inspection process.”

Event or circumstances requiring guidance interpretation:

On 5/22/12 at Dresden Unit 2 and 6/10/12 at Dresden Unit 3, minor steam leaks were discovered on elbows for the High Pressure Coolant Injection (HPCI) System Drain Pot Line. The purpose of this line is to provide a drainage path for any condensation that forms at steam isolations while the system is in standby. The line is isolated from the system upon initiation and not required for the system to perform its safety functions. This line of piping is ASME Code Class 2 piping and, per the Dresden Technical Requirements Manual (TRM), requires the structural integrity be restored or the component isolated immediately if the boundary is not in conformance. In order to isolate this portion of piping, the inboard and outboard steam isolation valves (2301-4/5) must be closed, thus isolating the entire HPCI system from steam and making it unavailable. The system remained operable and available prior to the steam supply valves being closed.

When reporting the unavailability for the Mitigating System Performance Index (MSPI), Dresden Station considered this unavailability to be Planned Unavailability based on the definitions provided in NEI 99-02 referenced above. The station counted the unavailability as planned since the system was still capable of performing its monitored function with the leak; i.e. the leaking component is not a monitored component and the monitored function of providing a source of high pressure make-up water to the Reactor Vessel (per the Reactor Oversight Program MSPI Bases Document for Dresden Nuclear Generating Station, Rev. 9, Nov. 2011 under Section 2.2) was not lost. This aligns with the above section from NEI 99-02 discussing unplanned unavailable hours.

On 4/25/13, a Regional NRC Inspector questioned the station on how it applied the MSPI unavailability. The NRC Inspector believes that the station did not remove the equipment from service electively due to

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the TRM requirement and, therefore, the unavailability should be counted as unplanned per the above section from NEI 99-02 discussing planned unavailable hours.

If licensee and NRC resident/region do not agree on the facts and circumstances explain:

The facts and circumstances are agreed upon. The only point of contention is whether the unavailability detailed above should be counted as planned or unplanned based on the interpretation of NEI 99-02.

Response Section

Proposed Resolution of FAQ

Revise the sections of NEI 99-02 that affect the interpretation of planned versus unplanned unavailability to make it clear that anytime there is not a failure of a monitored component /function, the unavailability is considered to be planned.

NEI 99-02, Rev. 6, page F-5, beginning at line 24:

Planned unavailable hours: These hours include time a train or segment is removed from service for a reason other than **a condition within the train/segment boundary that renders the train/segment unavailable**. Examples of activities included in planned unavailable hours are preventive maintenance, testing, equipment modification, or any other time **equipment is removed** from service to correct a degraded condition that had not resulted in loss of function. Based on the plant history of previous three years, planned baseline hours for functional equipment **that is removed from service** but could not be planned in advance (**e.g., predictive maintenance**) can be estimated and the basis documented. When used in the calculation of UAI, if the planned unavailable hours are less than the baseline planned unavailable hours, the planned unavailable hours will be set equal to the baseline value.

Unplanned unavailable hours: These hours include elapsed time between the discovery and the restoration to service of an equipment failure, **condition** or human error (such as a misalignment) **that results in a loss of function. Time of discovery is when the licensee** determines that a failure has occurred or when an evaluation determines that the **train/segment** would not have been able to perform its monitored function(s). In any case where a monitored component has been declared inoperable due to a degraded condition, if the component is considered available, there must be a documented basis for that determination, otherwise a failure will be assumed and unplanned unavailability would accrue. If the component is degraded but considered operable, timeliness of completing additional evaluations would be addressed through the inspection process. Unavailable hours to correct discovered conditions that render a monitored component incapable of performing its monitored function are counted as unplanned unavailable hours. An example of this is a condition discovered by an operator on rounds, such as an obvious oil leak, that was determined to have resulted in the equipment being non-functional even though no demand or failure actually occurred. Unavailability due to mis-positioning of components that renders a train incapable of performing its monitored functions is included in unplanned unavailability for the time required to recover the monitored function.

NRC Response

During the ROP Working Group meeting on November 21, 2013, the licensee indicated that the monitored function of the HPCI system would not be lost if a complete shear of the HPCI steam pot drain line were to occur. Since the monitored function of the HPCI system (single train) was

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supported, the unavailability as a result of removing the system from service to support repair of the leaks on the steam pot drain line is considered planned unavailability.

In addition to the licensee's proposed resolution to the FAQ, the NRC staff wants to clarify in the NEI 99-02 guidance that a failure of an unmonitored component within the system's boundary can cause unplanned unavailability to accrue if the failure results in a loss of the monitored function of the system/train/segment.

The staff recommends the following changes to NEI 99-02, Rev. 7, page F-6, beginning at line 23:

Planned unavailable hours: These hours include time a train or segment is removed from service for a reason other than **a condition within the system/train/segment boundary that renders the train/segment unavailable to perform its monitored function**. Examples of activities included in planned unavailable hours are preventive maintenance, testing, equipment modification, or any other time **equipment is removed** from service to correct a degraded condition that had not resulted in loss of function. ~~Based on the plant history of previous three years, planned baseline hours for functional equipment that is removed from service but could not be planned in advance (e.g., predictive maintenance) can be estimated and the basis documented.~~ When used in the calculation of UAI, if the planned unavailable hours are less than the baseline planned unavailable hours, the planned unavailable hours will be set equal to the baseline value.

Unplanned unavailable hours: These hours include elapsed time between the discovery and the restoration to service of an equipment failure, **condition**, or human error (such as a misalignment) **that results in a loss of the monitored function**. **Time of discovery is when the licensee** determines that a failure has occurred or when an evaluation determines that the **train/segment** would not have been able to perform its monitored function(s). In any case where a monitored **or unmonitored** component **within the system's boundary** has been declared inoperable ~~due to~~ **because of** a degraded condition, if the ~~component~~ **train/segment** is considered available, there must be a documented basis for that determination, otherwise a ~~failure~~ **loss of the monitored function** will be assumed and unplanned unavailability would accrue. If the component is degraded but considered operable, timeliness of completing additional evaluations would be addressed through the inspection process. Unavailable hours to correct discovered conditions that render a ~~monitored~~ **train/segment** ~~component~~ incapable of performing its monitored function are counted as unplanned unavailable hours. An example of this is a condition discovered by an operator on rounds, such as an obvious oil leak, that was determined to have resulted in the equipment being non-functional even though no demand or failure actually occurred. Unavailability due to mis-positioning of components that renders a **train/segment** incapable of performing its monitored functions is included in unplanned unavailability for the time required to recover the monitored function.

The FAQ effective date will be immediate once approved (01/15/2014).