

Proposed change to NEI 99-02 to address “time of discovery”

“Time of discovery” should be more clearly defined in the following sections of NEI 99-02, revision 5:

- Page 29, lines 18-20, end of second paragraph in section Indicator Definition.
- Page F-5, lines 34-42, fifth paragraph in section F.1.2.1. “Actual Train Unavailability”

Background. “Time of discovery” is used in the Mitigating Systems Performance Index (MSPI) for the assignment of train unavailable hours when the train cannot perform one or more of its **MSPI monitored** functions. The “time of discovery” is the start time for the train unavailable hours and the end time is when the train’s capability to perform its monitored function(s) is restored. Typically, “time of discovery” occurs when a **self-revealing** component failure happens causing the train to become unavailable. At other times, a component degraded condition may occur that prevents a train from performing its monitored **safety** function(s). In some of these cases it may take an evaluation to determine the impact of the degraded condition on the train’s monitored function(s).

An assumption of MSPI is that monitored **safety** function(s) are promptly restored after a component failure. (“Promptly” is not defined.) Therefore, degraded conditions are expected to be evaluated promptly so that if a degraded condition prevents the performance of a monitored **safety** function, the monitored **safety** function can be restored quickly.

For MSPI purposes, the “time of discovery” is when a **self-revealing** component failure occurs that renders a train unable to perform a monitored **safety** function. For a component degraded condition, “time of discovery” is when an evaluation is completed that determines that a train is/was unable to perform a monitored **safety** function. In both of these cases, train unavailability is assigned only for the time it takes to restore the ability to perform the monitored **safety** function(s) from the time the failure is known. In the case of a component degraded condition that renders a train unable to perform a monitored **safety** function, an appropriate type failure is assigned to the component in MSPI unreliability to account for the amount of time that the condition existed prior to discovery, when the component was in an unknown failed state.

Delays in initiating or completing evaluations of degraded conditions would be addressed through the inspection process.

Recommended Changes.

- Page 29, section titled Indicator Definition, second paragraph, line 20. Add the following sentence after the last sentence (in the parentheses) of the second paragraph; “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.~~

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- Page F-5, section titled “Actual Train Unavailability,” paragraph starting “Unplanned unavailable hours:” After the first sentence of this paragraph add “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.~~
- Page F-5, section titled “Actual Train Unavailability,” paragraph starting “Unplanned unavailable hours:” In the third sentence on line 39, revise the sentence to read “oil leak that was determined to have resulted in the equipment being non-functional.....”
- The background information above should be placed in a performance indicator basis document such as IMC 0308.

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