

FAQ 17-04

Watts Bar Unit 2 MSPI Effectiveness Date – Draft NRC Response

Plant: Watts Bar Nuclear Plant, Unit 2 (WBN 2)

Date of Event: 3/23/2017 (Condenser Failure)

Submittal Date: 11/26/2017

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Performance Indicator:

MS06 WBNU2 Mitigating System Performance Index (Emergency AC Power System)

MS07 WBNU2 Mitigating System Performance Index (High Pressure Injection System)

MS08 WBNU2 Mitigating System Performance Index (Auxiliary Feedwater System)

MS10 WBNU2 Mitigating System Performance Index (Cooling Water Systems)

Site-Specific FAQ (Appendix D)? Yes

FAQ requested to become effective when approved.

Question Section:

TVA requests the effective date of Watts Bar Unit 2 MSPI indicators to be extended until sufficient data is available to provide an accurate assessment value. This date has been determined to be the second quarter of 2018. The extension gives WBN Unit 2 four quarters of data and allows enough information to develop a trend.

The NRC documented the full transition of WBN Unit 2 to the Reactor Oversight Process (ROP) and the effective dates of the ROP indicators. The NRC also approved using the FAQ process if the information shows that the ROP indicators do not provide an accurate assessment value (Reference NRC Letters to TVA dated November 21, 2016 and October 22, 2015). This scheduled the indicators to be effective four quarters after the cornerstone is transitioned to the ROP. These MSPI indicators become effective the first quarter of 2018.

NEI 99-02 Guidance needing interpretation:

Items:

1. FAQ 14-02
2. NRC Letters to TVA dated November 21, 2016 and October 22, 2015.

Event or circumstances requiring guidance interpretation:

During March 2017, during the first operating cycle Watts Bar U2, the Condenser failed and required extensive repair to return to service. The reactor was shut down while the work on the secondary side was performed. This resulted in a loss of 3100 critical hours. The cause of the failure was inadequate vendor design (1970's) of the condenser wall support structure leading to support and wall failure. In addition, a 35-day refueling outage is planned for fourth Quarter of 2017 with an additional loss of 840 critical hours.

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

The NRC Watts Bar Site Resident Inspector was informed of this FAQ. No feedback was provided by the resident.

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Potentially relevant existing FAQ numbers:

FAQ 14-02, “Simulation of MSPI Indicator Reaction to Plant in Long Shutdown and Initial Startup.” Fort Calhoun

Response Section:

Proposed Resolution of FAQ:

Extend the effective date of the Watts Bar Unit 2 MSPI indicators to April 1, 2018 due to the loss of a significant number of critical hours. This loss of critical hours would significantly affect the accuracy of the assessment value.

The basis of Fort Calhoun FAQ 14-02 was a simulation that concluded the indicator was accurate after four quarters of critical hours. The WBN Unit 2 condenser failure and refueling outage loss of critical hours makes the indicators a three quarter assessment at the present effective date. The forecasted value of critical hours for Watts Bar U2 on December 31, 2017 is 6378 hours (including condenser failure and outage) compared to the four quarter maximum value of 8760.

Recommend the new effective date for Watts Bar U2 indicators MS06, 07, 08, and 10 be set at April 1, 2018. The NRC will continue to gray out the affected Watts Bar U2 indicators on NRC web site for the first quarter of 2018.

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

None

PRA update required to implement this FAQ? No

MSPI Basis Document update required to implement this FAQ? No

NRC Response

In the enclosure of a letter dated October 22, 2015 (ML15295A253), the NRC stated the following:

Similarly, at least four quarters of data is needed to calculate meaningful results from the MSPI (MS06, MS07, MS08, MS09, and MS10). As such, the data for MSPI indicators that are not shared with WBN Unit 1 will not begin to be considered as valid inputs into the Action Matrix until a minimum of four quarters of information have been provided.

In a letter dated November 21, 2016 (ML16326A210), the NRC indicated that all reactor safety cornerstones for Watts Bar Unit 2 have been transitioned to full Reactor Oversight Process oversight. As a result, the MSPI indicators were expected to become effective once the 4Q2017 data was included. However, because of a maintenance outage that resulted in zero critical hours for Watts Bar Unit 2 in 2Q2017, four quarters of information will now be available once the 1Q2018 information is submitted.

The resolution of FAQ 14-02 discussed a white paper that was provided to the ROP Working Group, “Simulation of MSPI Indicator Reaction to Plant in Long Term Shutdown and Initial Startup” (ML13079A693). The study concluded that situations of low critical hours should be

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treated on a case-by-case basis but as a starting point, MSPI should be grayed out for the startup of new plants until 12 months of operation have accumulated.

Watts Bar Unit 2 started up for the first time during 4Q2016, thus 12 months of operation would have accumulated once the 4Q2017 MSPI data was provided. In this FAQ, the licensee proposes that the MS06 (Emergency AC Power System), MS07 (High Pressure Injection System, MS08 (Heat Removal System), and MS10 (Cooling Water Systems) become valid once the 1Q2018 MSPI data is provided due to a maintenance outage that resulted in the loss of a significant number of critical hours in calendar year 2017. Specifically, Watts Bar Unit 2 lost approximately one quarter of critical hours within the first 12 months of operation, and reported zero critical hours for 2Q2018. Therefore, the licensee requests a one quarter extension before the MS06, MS07, MS08, and MS10 indicators become valid.

The NRC staff concludes that the requested one quarter extension is appropriate, such that the MS06, MS07, MS08, and MS10 performance indicators will become valid once 1Q2018 data has been included. The NRC will continue to gray out the Watts Bar Unit 2 MS06, MS07, MS08, and MS10 performance indicators on the NRC website during the first quarter of 2018.

Additionally, in FAQ 17-05, which was submitted at the same time as FAQ 17-04, the licensee proposes two separate extension requests to the time at which the MS09 (Residual Heat Removal System) performance indicator would become valid. One of the extension requests is the same one quarter request with the same basis as documented in this FAQ. An additional three quarter extension request for MS09 is included in FAQ 17-05 due to sensitivity concerns with the impact of certain components in the residual heat removal system on the MS09 performance indicator. For the same reasons as documented in this FAQ, the NRC staff concludes that the requested one quarter extension before the MS09 performance indicator becomes valid is appropriate. The NRC will continue to gray out the Watts Bar Unit 2 MS09 performance indicator on the NRC website during the first quarter of 2018. At the time of resolution of this FAQ, the NRC has not completed its review of the second extension request contained in FAQ 17-05.