

April 16, 2001

MEMORANDUM TO: Geoffrey E. Grant, Director  
Division of Reactor Projects  
Region III

FROM: Suzanne C. Black, Deputy Director */RA/*  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

SUBJECT: TASK INTERFACE AGREEMENT (TIA) REQUEST FOR EVALUATION  
REGARDING THE POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2,  
SERVICE WATER SYSTEM (TIA 2000-001) (TAC NOS. MB1143 AND  
MB1144)

By memorandum dated February 7, 2001, Region III issued a TIA requesting that the Office of Nuclear Reactor Regulation (NRR) provide an interpretation of the Point Beach Nuclear Power Plant (PBNP), Units 1 and 2, current licensing basis (CLB) for the service water (SW) system in-line strainers. The three specific questions follow along with the NRR staff's response:

1. *Was the licensee correct in determining that the gauges installed to monitor SW strainer differential pressure do not need (under the CLB) to be capable of indicating strainer plugging in excess of their design basis calculation (flow model) input assumptions?*

NRR staff's response:

The licensee's characterization of the CLB relative to the SW main Zurn strainers is correct. Although specific monitoring requirements for the Zurn strainers do not exist within the CLB, it is still the licensee's responsibility to identify and manage vulnerabilities and degradation mechanisms that can pose a challenge to the SW system (additional discussion about this can be found in Generic Letter (GL) 89-13, "Service Water System Problems Affecting Safety-Related Equipment"). If it is possible for the SW strainers to become fouled to the point where system operability is jeopardized, then the licensee should have measures in place to assure that this will not occur. This does not necessarily mean that the licensee must be able to monitor the differential pressure across the strainer. For example, if debris buildup is gradual over time, periodically inspecting and cleaning the strainer, or periodically flushing the strainer, may prove to be adequate. If there are certain situations when the SW strainers are especially susceptible to debris buildup, placing the strainers in continuous backwash during these periods may also be sufficient to address the concern. The appropriate solution depends on the specific situation and challenges that exist, and differential pressure indication and annunciation is not necessarily the only acceptable solution. The licensee should be able to justify whatever approach is taken based on the typical strainer fouling rates that are experienced for the various situations that are likely to occur.

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Plugging of the SW strainers by Zebra mussels and other biological fouling mechanisms deserves special consideration as discussed in GL 89-13. Licensees are expected to implement the measures discussed in the GL 89-13 to avoid any significant problems in this area.

We disagree with the licensee's view that procedural controls are not necessary for prescribing operator actions that are relied upon for preventing excessive fouling of the SW strainers during normal plant operation. Absent some other approach, these actions are in fact necessary to assure the continued operability of the SW system, and the assumed actions cannot be relied upon unless they are properly controlled and directed in accordance with approved written instructions.

2. *Was the licensee correct in determining that they do not need to change the operation of the installed blow-down system (including modifying the system if determined necessary) to maintain SW strainer plugging within flow model assumptions when new information or evaluations challenge the adequacy of existing set points and accuracies?*

NRR staff's response:

As discussed in response to Question 1, the appropriate solution depends on the specific situation and challenges that exist, and differential pressure indication and annunciation is not necessarily the only acceptable solution. The licensee should be able to demonstrate how operability of the SW system is assured recognizing the potential for strainer fouling that exists for the various situations that apply. The approach that is described in the licensee's evaluation is acceptable, provided it is supported by historical data and trending information, and provided that appropriate procedural controls are implemented.

3. *Was the licensee's technical evaluation of the "credibility" of SW strainer plugging technically adequate and consistent with the plant's CLB?*

NRR staff's response:

The licensee's evaluation included consideration of the rate of strainer fouling during normal operating conditions, accelerated fouling rates that could occur during off-normal conditions, and previous plant experience. The logic that was applied by the licensee is reasonable and considered to be acceptable for assuring adequate flow capability through the SW strainers, recognizing that future situations may require additional consideration and review. It is noted that, in some instances, the licensee's evaluation takes credit for operator actions to place the strainers in continuous backwash. As discussed in response to Question 1, operator actions cannot be assured unless they are properly controlled and directed in accordance with approved written instructions.

From a deterministic perspective, the NRC would assume that the SW strainers are fouled to the maximum amount that would be expected to occur during normal plant operation, giving credit for procedural controls that exist and for operation of the strainer backwash. Following accident initiation, non-safety-related equipment is assumed to be unavailable (e.g., strainer backwash does not function), and the normal rate of SW strainer fouling would typically be assumed. An accelerated rate of SW strainer fouling would not be assumed unless it is expected as a consequence of the event, such as might be the case during a tornado (for example). Operator actions that are proceduralized and consistent with the NRR staff's criteria (e.g., action is not relied upon in place of automatic safety system settings; area is readily accessible to the operators during the event; operators are available and know when to perform the action considering all other actions that must be performed; time is not a limiting constraint) may be credited for managing the additional fouling that is expected to occur during the course of the event. This would typically lead to an administrative fouling limit that is something less than the maximum allowed value of 60 percent to permit sufficient time for operators to take the required actions following an event.

#### Summary

The NRR staff reviewed the background information provided by Region III in the February 7, 2001, TIA request. In general, the NRR staff agrees that the licensee is meeting its CLB for the SW system in-line strainers. However, there is one exception. The licensee is relying on operator actions to prevent excessive fouling, but does not have procedural controls in place. Operator actions cannot be assured unless they are properly controlled and directed in accordance with approved written instructions. Any enforcement action arising from this TIA response should be coordinated with the Office of Enforcement.

This completes our review and evaluation efforts under TIA 2000 and closes TAC Nos. MB1143 and MB1144, respectively for PBNP, Units 1 and 2.

Docket Nos. 50-266 and 50-301

cc: B. Platcheck, Region I  
L. Plisco, Region II  
K. Brockman, Region IV

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G. Grant

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