

**Clinton Power Station
License Amendment Request
Mode 3 Applicability – LPCI/SDC**

NRC Pre-Submittal Teleconference
March 7, 2017



Agenda

- Objective of Meeting
- Background and Need for Amendment
- Schedule

Objective

- Present information to the NRC staff describing a proposed License Amendment Request (LAR) for Clinton Power Station (CPS) to resolve a CDBI violation concerning incapability of the residual heat removal (RHR) design to support Technical Specification (TS) operability requirements.
- Obtain feedback from the NRC staff on the proposed LAR and gain an understanding of the NRC staff's expectations for the content of a high quality submittal.
- Answer any questions from the NRC staff regarding the proposed LAR.

Background

December 2016 NRC CDBI Inspection

- Green finding and associated Non-cited Violation (NCV) for failure to promptly identify that the incapability of the RHR design to support TS operability requirements was a condition adverse to quality.
- Specifically, when reactor coolant temperature is greater than 150° F, RHR cannot be realigned from SDC mode of operations to provide the TS required functions of the emergency core cooling system.
- CPS captured this issue in the Corrective Action Program (CAP) both prior to, and subsequent to the inspection. The planned corrective action, as documented in NRC Inspection Report 05000461/12016009, was to submit an LAR to align TS requirements with the design capabilities.

Background (cont.)

CPS Design

- TS 3.5.1⁽¹⁾ requires all low pressure ECCS injection/spray systems to be OPERABLE in Modes 1, 2, and 3.
- By design, the suppression pool suction valve on the ECCS Loop that is supporting SDC operations must be shut, otherwise the reactor coolant would drain to the suppression pool. The suppression pool suction valve does not automatically realign on a LPCI signal.
- In addition, the suppression pool suction valve is not capable of opening for manual realignment, due to both water hammer and pressure locking/thermal binding concerns which have not been analyzed above 150 °F.

(1) TS 3.5.1, ECCS - Operating

Background (cont.)

TS History

- Prior to implementing NUREG-1434 Improved Tech Specs (ITS) in 1994, the CPS TS 3.5.1 recognized the required LPCI inoperability, and annotated Mode 3 applicability with a Note that stated:

One LPCI subsystem of the RHR system may be aligned in the shutdown cooling mode when reactor vessel pressure is less than the LPCI cut-in permissive set point.

- ITS did not include this site-specific Mode 3 note, and therefore it was removed in the CPS ITS conversion. Instead, ITS provided a new note in the Surveillance Requirements for TS 3.5.1, and a similar note in TS 3.5.2, TS 3.6.1.7, TS 3.6.1.9, and TS 3.6.2.3⁽²⁾:

Low pressure coolant injection (LPCI) subsystems may be considered OPERABLE during alignment and operation for decay heat removal with reactor vessel pressure less than the residual heat removal cut-in permissive pressure in MODE 3, if capable of being manually realigned and not otherwise inoperable.

- (2) TS 3.5.2, ECCS – Shutdown; TS 3.6.1.7, Residual Heat Removal (RHR) Containment Spray System; TS 3.6.1.9, Feedwater Leakage Control System (FWLCS); and TS 3.6.2.3, Residual Heat Removal (RHR) Suppression Pool Cooling

Background (cont.)

TS History (cont.)

- CPS implemented the new TS 3.5.1, TS 3.5.2, TS 3.6.1.7, TS 3.6.1.9, and TS 3.6.2.3 with the same interpretation as the pre-ITS TSs. That is, the station considered the new note to be an allowance to consider LPCI operable, if capable of being realigned.
- However, since the suppression pool suction valve is not capable of opening for manual realignment (i.e., as previously discussed), CPS is not able to implement the ITS Note, and therefore, declares LPCI inoperable during decay heat removal in Mode 3 with reactor pressure less than the cut-in permissive.
- The current NRC interpretation of the ITS LCO and associated Note is that the systems are required to be OPERABLE, and failure to implement the Note (i.e., declaring LPCI inoperable) constitutes entry into the ACTIONS for operational convenience.

Proposed Resolution

- The NRC issued a similar Green Finding and associated NCV to LaSalle County Station (LSCS) in 2012. In response to that Finding/NCV, LSCS submitted, and the NRC approved an LAR in October 2015 that deleted this Note [ML15244B410].
- The proposed change will delete the ITS Note from CPS TS 3.5.1, TS 3.5.2, TS 3.6.1.7, TS 3.6.1.9, and TS 3.6.2.3.
- The proposed CPS TS change will also reinstate the pre-ITS Note to the Applicability for TS 3.5.1, TS 3.6.1.7, TS 3.6.1.9, and TS 3.6.2.3.

One Low pressure coolant injection (LPCI) subsystem may be inoperable during alignment and operation for decay heat removal with reactor steam dome pressure less than the residual heat removal cut-in permissive pressure in MODE 3.

Schedule

- Submit license amendment request on, or before 05-May-2017
- Request review and approval in 12 months.