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ILLINOIS POWER COMPANY

CLINTON POWER STATION, P.O. BOX 678, CLINTON, ILLINOIS 61727

October 11, 1985

Docket No. 50-461

Director of Nuclear Reactor Regulation
Attention: Mr. W. R. Butler, Chief
Licensing Branch No. 2
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Clinton Power Station Unit #1
Diesel Generator Reliability
SER License Condition #7

Dear Mr. Butler:

The Clinton Power Station (CPS) Safety Evaluation Report (SER) Section 1.11 lists several issues for which a condition will be included in the operating license to ensure that NRC requirements are met during plant operation. Among these issues is License Condition #7, "Diesel Generator Reliability (9.6.3.1)".

In SER Section 9.6.3.1, the NRC Staff "...concluded that there is sufficient assurance of diesel-generator reliability to warrant unrestricted plant operation through the first refueling period. However, to ensure long-term reliability of the diesel-generator installations the Staff requires that the following design and procedural modifications be implemented before the first refueling.

(1) Moisture in Air Starting System.
(2) Turbocharger Gear Drive Problem.
(3) Automatic Prelube.
(4) Testing, No-load, and Light-load Operation."

Attachments 1 through 4, respectively, address these four design and procedural modifications, and discuss the actions taken by Illinois Power (IP) to resolve these issues.

With respect to items (1) and (4), IP has completed all required actions and believes these SER issues can be closed by the NRC.

With respect to items (2) and (3), IP has completed those actions necessary to ensure safe and reliable operation of CPS through the first refueling outage. IP will be installing additional equipment to satisfy NRC requirements for diesel generator reliability. IP believes that the portions of these

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portions of these SER issues related to procedural modifications can be closed by the NRC and that the portions related to design modifications and equipment installation would remain as confirmatory license conditions.

With the information contained in this letter and in the attachments, the NRC Staff should have sufficient information to revise License Condition #7 in the next SER supplement. Please contact me if there are any questions on this material.

Sincerely yours,

F. A. Spangenberg
Manager - Licensing
and Safety

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Attachments

cc: B. L. Siegel, NRC Clinton Licensing Project Manager
NRC Resident Office
Regional Administrator, Region III, USNRC
Illinois Department of Nuclear Safety

Attachment 1

(1) Moisture in Air Starting System

SER Section 9.6.5 states that the NRC required installation of air dryers upstream of the air receivers and, in a meeting in Bethesda on November 4 and 5, 1981, IP committed to install dessicant type air dryers which ensure continual supply of starting air at the quality level stated in the Final Safety Analysis Report (FSAR). IP also committed to monthly verification and/or maintenance of air dryer performance. These commitments also appear in the CPS FSAR in responses to Questions 040.49 dated November 1981 and 040.52 dated September 1982:

1) Are the monthly verifications in procedures? If so - state that.

2) What about air quality levels?

Installation of the air dryers has been completed and the installation has been verified both by review of the associated documentation and by physical inspection.

NRC Region III generated open item 461/85-05-23 to verify that dessicant air dryers are installed upstream of diesel generator air start air receivers prior to fuel load. The issue has been presented to Region III for closure and has been reviewed by the inspector. The open item was closed in Inspection Report 461/85036.

Attachment 2

(2) Turbocharger Gear Drive Problem

SER Section 9.6.3.1 states that the NRC required and, in a meeting in Bethesda on November 4 and 5, 1981, IP committed to the installation of a heavy-duty turbocharger drive gear assembly as recommended by NUREG/CR-0660 prior to startup following first refueling. This commitment also appears in the CPS FSAR in the response to Question 040.19 dated November 1981.

IP will be replacing the presently installed conventional turbochargers with heavy duty turbochargers and drive gears prior to startup following first refueling. Because turbocharger drive gears wear out at a faster rate than expected when the diesels are run at no-load or low-load, the manufacturer recommends that the turbocharger be overhauled following 200 hours of run time at loads below 20% of full load. For this reason, IP is restricting the preoperational and monthly surveillance testing to as few hours of no-load and low-load operation as possible, while still performing all required tests. The procedural modifications necessary to ensure that no-load and/or low-load operation is minimized have been completed.

Total run time for each diesel engine at no-load and/or low-load prior to replacement of the turbochargers is expected to be less than 200 hours. This run time takes into consideration all tests that have been performed and that are expected to be performed prior to the first refueling, as well as the "worst case" assumption of no-load operation of the diesels following a LOCA with offsite power available. IP will periodically review the Emergency Diesel Generator log books to ensure that no-load and low-load run time is kept to a minimum.

By limiting the run time at no-load and/or low-load operation, the turbochargers can reliably operate during the period before first refueling.

NRC Region III generated open item 461/85-05-20 to verify installation of a heavy-duty turbo-charger drive gear assembly on all diesel generators.

Attachment 3

(3) Automatic Prelube

SER Section 9.6.6 states that the NRC required installation of a prelubrication system for the diesel engines that meets the diesel manufacturer's recommendations, and if the system is not installed prior to startup, that the NRC required and, in a letter dated December 2, 1981, IP committed to manually prelubricate the diesel engines in accordance with the manufacturer's recommendations at least once per week and before each manual diesel engine start. This commitment also appears in the CPS FSAR in the response to Question 040.60 dated November 1981.

CPS operating and surveillance procedures have been changed to reflect the requirements for manual prelubrication. IP will be installing the manufacturer's recommended automatic prelubrication system as soon as parts are received from the manufacturer. Installation is scheduled to be complete before startup.

Because of the manual prelubrication that will be performed once per week and prior to each manual diesel engine start, the diesel engines will be protected from the potentially adverse effects of dry engine starts during the period prior to installation of the automatic prelubrication system.

NRC Region III generated open item 461/85-05-24 to verify that the manufacturer's recommended fix for prelubrication of diesel engines is implemented, and if it is not implemented prior to fuel load, to verify that the applicant has implemented manual prelubrication. The issue has been presented to Region III for closure and has been reviewed by the inspector. The open item was closed in Inspection Report 461/850361.

Attachment 4

(4) Testing, No-load, and Light-load Operation

SER Section 9.6.3.1 states that the NRC required and, in a meeting in Bethesda on November 4 and 5, 1981, IP committed to implement the following procedures prior to startup:

(1) Implement the manufacturer's recommendations for no-load and light-load operations.
(2) During periodic testing, the diesel will be loaded to a minimum of 25 percent of full load or as recommended by the manufacturer.
(3) During trouble shooting, no-load operation will be minimized. If the trouble shooting operation is over an extended period (that is, 3 to 4 hours or more), the engine shall be cleared in accordance with item (1) above.

This commitment also appears in the CPS FSAR in the response to Question 040.21 dated November 1981.

CPS operating and surveillance procedures have been changed to reflect the above requirements.

NRC Region III generated open item 461/85-05-21 to verify the applicant's implementation of no-load and light-load DG operating procedures. The issue has been presented to Region III for closure and has been reviewed by the inspector. The open item was closed in Inspection Report 461/85036.