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**ILLINOIS  
POWER**

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Docket No. 50-461

Document Control Desk  
Nuclear Regulatory Commission  
Washington, D.C. 20555

Subject. Revision 1 to Clinton Power Station  
Core Operating Limits Report for Cycle 4

Dear Sir:

Enclosed is a copy of Revision 1 to the Clinton Power Station (CPS) Core Operating Limits Report (COLR) for Reload 3, Operating Cycle 4. By letter dated May 8, 1992 (Reference U-601977), Illinois Power (IP) submitted a copy of Revision 0 to the CPS COLR for Reload 3, Operating Cycle 4. However, General Electric (GE) recently notified IP that they were reviewing a condition for reportability pursuant to 10CFR21 which has an impact on the minimum critical power ratio (MCPR) limits contained in the previously submitted COLR. The potentially reportable condition (PRC) currently under review by GE involves the potential for a misoriented (rotated) fuel bundle to result in a change in critical power ratio (delta CPR) significant enough to be considered in establishing the MCPR operating limit.

Per General Electric Standard Application for Reactor Fuel (GESTAR), NEDE-24011-P-A-US Section S.2.2.3.7, analyses for misoriented fuel bundles are performed for D-lattice reload cores only. GESTAR states that misoriented fuel bundle analyses are not performed for cores that consist of C-lattice fuel bundles only. Because of the symmetry of C-lattice fuel bundles, GE concluded that rotation of a C-lattice fuel bundle results in an insignificant change in CPR and therefore is not limiting. On the basis that S-lattice fuel is also symmetric, GE concluded that similar results could be expected for S-lattice fuel types (i.e., for CPS).

As a result of the PRC identified above, GE is reevaluating the above conclusion. GE's reevaluation of the misoriented bundle event indicates that, because of the evolution of fuel designs (i.e., fuel and burnable poison loading patterns), this event may now produce delta CPRs significant enough to be considered in establishing the MCPR operating limit. A misoriented fuel bundle would affect a BWR/6 more than older BWR designs since, due to faster scram capability, the MCPR operating limit is closer

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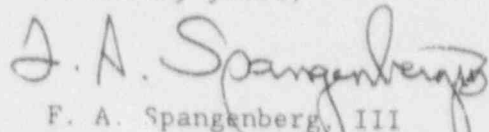
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to the core-wide transient Safety Limit for a BWR/6 plant. Conservative calculations performed for CPS have shown that a postulated misoriented fuel bundle accident will result in a delta CPR of 0.13 for the new Reload 3 fuel (Fuel Type GE8B-P8SQB301-10GZ-120M-150-T). The delta CPR for misoriented Reload 2 fuel was calculated to be 0.11. The previous operating limit MCPR for Operating Cycle 4 was based on a delta CPR of 0.11 for the 100°F loss of feedwater heating and control rod withdrawal error events. As a result, this postulated event for CPS only impacts the MCPR operating limit for the new Reload 3 fuel.

Regarding the probability of occurrence of operation with a misoriented fuel bundle, proper orientation of fuel assemblies in the reactor core is readily verified by visual observation and assured by verification procedures during core loading. The core verification program at CPS is consistent with GE SIL 347, December 1980 and consists of three independent verification steps. Initial verification is performed by the fuel handling personnel. Independent verification is performed using a camera and videotape, making two separate passes: First, to verify proper bundle orientation, and second, to verify proper bundle location using serial numbers. A third verification is performed by independently reviewing the videotape. These verifications provide assurance that all fuel bundles are properly oriented in the reactor core. As a result, IP believes that a misoriented fuel bundle accident at CPS is not credible.

Although IP believes a misoriented bundle accident is not credible, IP has revised the COLR for Operating Cycle 4 (See Figures 2.2-1a and 2.2-1b of the enclosed, revised COLR) to incorporate the more conservative MCPR operating limit for the new Reload 3 fuel. IP believes these actions are prudent based on the results of the conservative misoriented fuel analysis performed by GE for CPS. IP also believes that this is consistent with CPS Technical Specification 6.9.1.9 as the misoriented fuel bundle accident is considered to be an anticipated operational occurrence in GESTAR. The above actions are considered to be interim actions until such time as GE completes evaluation of the PRC.

Sincerely yours,

  
F. A. Spangenberg, III  
Manager, Licensing and Safety

Enclosure

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cc: NRC Clinton Licensing Project Manager  
NRC Resident Office  
Regional Administrator, Region III, USNRC