3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources-Operating

LCO 3.8.1 The following AC electrical power sources shall be OPERABLE:

---NOTE---
In response to low voltage concerns addressed in IP Letter U-602796 dated July 22, 1997, and in accordance with an approved exemption from the requirements of General Design Criterion (GDC) 17 of 10 CFR 50 Appendix A, for the period up to and including October 15, 1997, the LCO requirement for two qualified offsite sources may be satisfied with one qualified circuit and one circuit that does not strictly conform to the capacity and capability requirements of GDC 17. With two circuits that do not strictly conform to the capacity and capability requirements of GDC 17, however, both circuits shall be considered inoperable.
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a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electric Power Distribution System; and

b. Three diesel generators (DGs).

APPLICABILITY: MODES 1, 2, and 3.

---NOTE---
Division 3 AC electrical power sources are not required to be OPERABLE when High Pressure Core Spray System is inoperable.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit. AND A.2 Restore offsite circuit to OPERABLE status.	1 hour AND Once per 8 hours thereafter AND 72 hours AND 6 days from discovery of failure to meet LCO

(continued)

No Changes
Provided for continuity only

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One required DG inoperable.	B.1	Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	B.2	Declare required feature(s), supported by the inoperable DG, inoperable when the redundant required feature(s) are inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND		
	B.3.1	Determine OPERABLE DG(s) are not inoperable due to common cause failure.	24 hours
	OR		
	B.3.2	Perform SR 3.8.1.2 for OPERABLE DG(s).	24 hours
	AND		
	B.4	Restore required DG to OPERABLE status.	72 hours AND 6 days from discovery of failure to meet LCO

(continued)

No Changes
Provided for continuity only

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two offsite circuits inoperable.	C.1 Declare required feature(s) inoperable when the redundant required feature(s) are inoperable. AND C.2 Restore one offsite circuit to OPERABLE status.	12 hours from discovery of Condition C concurrent with inoperability of redundant required feature(s) 24 hours
D. One offsite circuit inoperable. AND One required DG inoperable.	D.1 Restore offsite circuit to OPERABLE status. OR D.2 Restore required DG to OPERABLE status.	12 hours 12 hours
E. Two required DGs inoperable.	E.1 Restore one required DG to OPERABLE status.	2 hours OR 24 hours if Division 3 DG is inoperable
F. Required Action and Associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3. AND F.2 Be in MODE 4.	12 hours 36 hours

(continued)

Attached Marked-Up Pages of the
Technical Specification Bases Changes

BASES (continued)

LCO Two qualified circuits between the offsite transmission network and the onsite Class 1E Distribution System and three separate and independent DGs (1A, 1B, and 1C), ensure availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an anticipated operational occurrence (AOO) or a postulated DBA.

Qualified offsite circuits are those that are described in the USAR and are part of the licensing basis for the unit.

Each offsite circuit must be capable of maintaining rated frequency and voltage, and accepting required loads during an accident, while connected to the ESF buses. Each offsite circuit consists of incoming breaker and disconnect to the respective reserve auxiliary transformer (RAT) or emergency reserve auxiliary transformer (ERAT) and the respective circuit path including feeder breakers to each of the 4.16 kV ESF buses.

Insert A

Each DG must be capable of starting, accelerating to rated speed and voltage, and connecting to its respective ESF bus on detection of bus undervoltage. This sequence must be accomplished within 12 seconds. Each DG must also be capable of accepting required loads within the assumed loading sequence intervals, and must continue to operate until offsite power can be restored to the ESF buses. These capabilities are required to be met from a variety of initial conditions such as DG in standby with engine hot and DG in standby with engine at ambient conditions. Additional DG capabilities must be demonstrated to meet required Surveillances, e.g., capability of the DG to revert to standby status on an ECCS signal while operating in parallel test mode.

Proper sequencing of loads, including tripping of nonessential loads, is a required function for DG 1A and DG 1B OPERABILITY.

The AC sources in one division must be separate and independent (to the extent possible) of the AC sources in the other division(s). For the DGs, the separation and independence are complete. For the offsite AC sources, the separation and independence are to the extent practical.

(continued)

Insert A

In response to low voltage concerns addressed in IP Letter U-602796 dated July 22, 1997, and in accordance with an approved exemption from the requirements of General Design Criterion (GDC) 17 of 10 CFR 50 Appendix A, for the period up to and including October 15, 1997, the LCO requirement for two qualified offsite sources may be satisfied with one qualified circuit and one circuit that does not strictly conform to the capacity and capability requirements of GDC 17. A circuit that does not strictly conform to the capacity and capability requirements of GDC 17 is one for which voltage may be intermittently less then the minimum required for the plant. Acceptability of such a source is based, in part, on the capability to quickly restore voltage to the source if required, as may be effected through load shedding, etc. Acceptable voltages for the offsite circuits are based on actual voltage levels or a predictive model established to estimate, under various conditions, what the transmission system voltage should be in the event of a plant trip since such voltages are normally supported to higher levels with the plant on line.

While the exemption (and corresponding license amendment) is in effect, the following actions are required to be taken in the event that voltage on one or both offsite circuits is less than the minimum required based on the actual voltage level or as determined by the predictive model:

(1) With less than minimum required voltage for one offsite circuit during normal plant operation, plant operators shall coordinate with the IP electric dispatch center to be prepared to take measures to restore supply voltage. Mode changes are permitted with less than minimum required voltage for one offsite circuit.

(2) With less than minimum required voltage for both offsite circuits during normal plant operation, the Required Actions for Condition C under TS 3.8.1 shall be entered. Entry into and exit from Condition C will be coincident with the actual or predictive voltage values respectively being less than or greater than the minimum required voltage. Plant startup is not permitted with less than minimum required voltage on both offsite circuits. The total cumulative amount of time that Condition C is in effect shall be tracked.

BASES

SURVEILLANCE REQUIREMENTS /Diesel Generator Test Schedule (continued)

A test interval in excess of 7 days (or 31 days, as appropriate) constitutes a failure to meet SRs and results in the associated DG being declared inoperable. It does not, however, constitute a valid test or failure of the DG, and any consecutive test count is not reset.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17.
2. USAR, Chapter 8.
3. Regulatory Guide 1.9.
4. USAR, Chapter 6.
5. USAR, Chapter 15.
6. Regulatory Guide 1.93.
7. Generic Letter 84-15, July 2, 1984.
8. 10 CFR 50, Appendix A, GDC 18.
9. Regulatory Guide 1.108.
10. Regulatory Guide 1.137.
11. ANSI C84.1, 1982.
12. NUMARC 87-00, Revision 1, August 1991.
13. IEEE Standard 308.
14. IP Calculation 19-AN-19.
15. IP Calculation 19-AQ-02.
16. NRC SER for IP Operating License Amendment 115.

Attached Environmental Assessment

Environmental Assessment

IP's request is based on granting a temporary partial exemption from the requirements contained in General Design Criterion 17, "Electric Power Systems," of Appendix A to 10 CFR 50. With consideration and flexibility given to variations in design, siting and environmental conditions, the General Design Criteria of Appendix A to 10 CFR 50 establish minimum requirements for the principal design criteria for water-cooled nuclear power plants.

Licensing of Clinton Power Station (CPS) was based, in part, on the NRC's evaluation of the CPS design as it conforms to the General Design Criteria. The NRC's review, evaluation and acceptance of the design for the electric power system at CPS, as described in the CPS Final Safety Analysis Report, was documented in the CPS Safety Evaluation Report (NUREG 0853) issued to support licensing of the facility. Specific conformance of the design for the CPS onsite and offsite electric power systems to GDC 17 is thus documented in the Safety Evaluation Report. IP's request to temporarily allow plant operation with one of the two offsite circuits intermittently having voltage that is less the minimum value conservatively established for CPS, would establish an operating configuration that in not strictly in conformance with GDC 17. Specifically, an offsite source with voltage intermittently less than required, does not constitute a circuit having "sufficient capacity and capability" as required by GDC 17. Consequently, an exemption is required from the requirement of GDC 17 stating, "The safety function for each system [i.e., the onsite and offsite electric power system] (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents."

The Need for the Proposed License Amendment and Exemption

The proposed amendment and exemption is needed since strict application of the requirements of GDC 17 of Appendix A to 10 CFR 50, regarding the requirement for the offsite electric power system to have *sufficient capacity and capability*, is not necessary to achieve the underlying purpose of the rule and would impose undue hardships to IP.

Strict conformance to GDC 17 requires that the offsite circuit experiencing intermittent low voltages have sufficient capacity and capability such that voltage is maintained, on a continuous basis, above the minimum value conservatively established for CPS. IP has determined that all practical measures taken to boost voltage, short of interrupting service

to customers, are not sufficient to maintain the minimum required voltage during all conditions. Further action to restore voltage would necessitate power interruptions.

In response to the intermittent voltage condition for the offsite electrical system due to the unusual conditions existing in the Illinois region this summer, IP has implemented measures to assess when the offsite electrical system voltage would be inadequate in the event of a plant trip, has performed an analysis to assess the risk associated with continued plant operation for the period of time within which the intermittent condition is likely to occur (i.e., until this fall), and has established (by practice) a reasonable recovery time to restore offsite system voltage in the event that it is needed (assuming a loss of the other offsite circuit).

Without the exemption, the offsite circuit experiencing intermittent periods of lower than expected voltage would have to be considered inoperable. Plant startup or continued plant operation is not permitted with one offsite circuit inoperable.

Environmental Impacts of the Proposed Amendment and Exemption

Granting the exemption and license amendment would not significantly increase the probability of unavailable offsite power in the event of an accident, and therefore, would not significantly increase the probability of a radiological release from CPS. The availability and reliability of the onsite power circuit would not be affected by the exemption/amendment. The availability and reliability of the offsite circuit having adequate voltage would also not be affected. Although there is a slight increase in the probability of having the low-voltage offsite circuit unavailable following a plant trip, or both sources unavailable in the event of a loss of the other offsite circuit, this increase is small based on the factors identified, and actions taken or that can be taken, by IP. On the assumption that electric power would still be available for safety-related equipment required to mitigate an accident, the proposed change does not involve an increase in the consequences of an accident.

With regard to potential nonradiological impacts, the proposed exemption/amendment would not affect the operation of the facility on the basis that adequate electric power will still be available to the facility during accident conditions, and particularly, during normal operation. With no impact on plant operation, the proposed change does not impact nonradiological effluents and has no other environmental impact. With regard to IP's customers, the intent of the exemption/amendment is to permit continued plant operation, which will support grid voltage, without interrupting service to IP's customers, the latter of which could potentially have environmental and public safety impacts.

Alternative to the Proposed Action

Given that there are no significant environmental effects associated with the proposed exemption/amendment beyond those attributed to operation of the facility, any alternatives

(except to not allow operation of the facility) would have no greater, favorable environmental impact.

The principal alternative would be to deny the requested exemption/amendment. This would effectively preclude operation of the facility until the intermittent voltage condition is resolved. Notwithstanding, IP has provided justification to support safe startup and operation of CPS. On the basis that safe plant operation is justified, and given the fact that strictly imposing GDC 17 would not allow plant operation, the burden associated with strict compliance with GDC 17 is not justified, particularly with respect to any environmental impact.

Alternative Use of Resources

The proposed amendment/exemption does not involve the use of any resources not previously considered in the "Final Environmental Statement Related to the Operation of Clinton Power Station, Unit 1," dated May 1982.