ENTERGY

Entergy Operations, Inc.
P.O. Box 756
Port Gibson, MS 39150
Tel 601 437 2800

C. R. Hutchinson
Vice President
Operations
Grand Gulf Nuclear Station

April 18, 1996

U.S. Nuclear Regulatory Commission
Mail Station P1-37
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Grand Gulf Nuclear Station
Docket No. 50-416
License No. NPF-29
24 Hour EDG Technical Specifications Change
Proposed Amendment to the Operating License (PCOL- 96/05)

GNRO: 96/00038

Gentlemen:

Entergy Operations, Inc. is submitting by this letter a proposed amendment to the Grand Gulf Nuclear Station (GGNS) Operating License. The proposed change to the Technical Specification modifies Note 2 to Surveillance Requirement 3.8.1.14. Presently, Note 2 prohibits the performance of the 24-hour emergency diesel generator (EDG) maintenance run while the unit is in either Mode 1 or 2. The proposed change would remove this restriction thus allowing the 24 hour run to be performed during any mode of operation (i.e., Mode 1, 2, 3, 4 or 5).

The Staff has previously expressed concern about the performance of the 24-hour EDG load test while paralleled to the offsite power systems. This concern, based on the common-mode vulnerability of the offsite and onsite sources during testing, led to restricting the performance of the test during periods when the reactor was shutdown (i.e., Mode 3, 4 or 5). Specifically, the Staff was concerned that if a fault or grid disturbance were to occur while an EDG was connected in parallel with the offsite systems, the availability of the EDG for subsequent emergency operation could be adversely affected.

Recently, the Staff has approved several licensees' requests (e.g., Pennsylvania Power & Light and Niagara Mohawk Power) for eliminating the Mode 1 and 2 restrictions when performing the 24-hour EDG run. NRC approval has been based on the existence of unique EDG design features and/or special provisions that ensure that paralleled operation of the EDG with offsite sources will not prevent the EDG from performing its assumed safety functions. Attachment 2 provides similar justification for GGNS.

190070

A001

While the performance of these surveillance requirements has in the past not affected outage critical path, continued certainty of no future impact is not assured. As outage schedules continue to be optimized, the likelihood that one or all three of these surveillances could adversely impact future outage critical paths is ever increasing. In addition, the performance of these surveillances is very operator intensive thus placing additional strain on a limited resource during refueling outages. Performance of these tests at times other than during refueling outages lessen both the complexity of the outages and the vying for limited operations' resources. For these reasons, Entergy Operations, Inc. believes the approval of the proposed change will result in expected benefits well in excess of $100,000 over the remaining life of the plant.

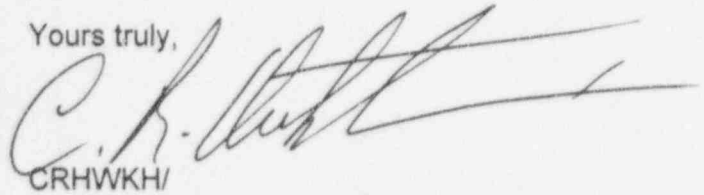
Consequently, the proposed amendment is being submitted as part of the cost beneficial licensing action (CBLA) program established within the NRR. EOI request that the Staff complete its review and approval of the subject Technical Specifications change no later than September 15, 1996, in time to support GGNS's October 1996 refueling outage.

Attachment 2 provides a detailed description of the proposed changes, justification and the No Significant Hazards Considerations. Attachment 3 is a copy of the marked up TS pages.

Based on the guidelines in 10 CFR 50.92, Entergy Operations has concluded that this proposed amendment involves no significant hazards considerations. Attachment 2 details the basis for this determination.

In accordance with the provisions of 10 CFR 50.4, the signed original of the requested amendment is enclosed.

Yours truly,



CRHWKH/
attachment: 1. Affirmation per 10 CFR 50.30
2. Discussion and Justification
3. Mark-up of Affected Technical Specifications and Bases

cc: (See Next Page)

cc:

Mr. J. E. Tedrow (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
Mr. H. L. Thomas (w/o)
Mr. J. W. Yelverton (w/a)

Mr. J. N. Donohew, Project Manager (w/2)
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Stop 13H3
Washington, D.C. 20555

Mr. L. J. Callan (w/a)
Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

Dr. Eddie F. Thompson (w/a)
State Health Officer
State Board of Health
P.O. Box 1700
Jackson, Mississippi 39205

BEFORE THE

UNITED STATES NUCLEAR REGULATORY COMMISSION

LICENSE NO. NPF-29

DOCKET NO. 50-416

IN THE MATTER OF

MISSISSIPPI POWER & LIGHT COMPANY

and

SYSTEM ENERGY RESOURCES, INC.
and

SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION
and

ENTERGY OPERATIONS, INC.

AFFIRMATION

I, C. R. Hutchinson, being duly sworn, state that I am Vice President, Operations GGNS of Entergy Operations, Inc.; that on behalf of Entergy Operations, Inc., System Energy Resources, Inc., and South Mississipp' ectric Power Association I am authorized by Entergy Operations, Inc. to sign and file with the Nuclear Regulatory Commission, this application; that I signed this application as Vice President, Operations GGNS of Entergy Operations, Inc.; and that the statements made and the matters set forth therein are true and correct to the best of my knowledge, information and belief.

C. R. Hutchinson

STATE OF MISSISSIPPI
COUNTY OF ~~CLAIBORNE~~ W

SUBSCRIBED AND SWORN TO before me, a Notary Public, in and for the County and State above named, this 18th day of April, 1996.

(SEAL)

Notary Public

My commission expires:

MISSISSIPPI STATEWIDE NOTARY PUBLIC
MY COMMISSION EXPIRES JUNE 16, 1997
BONDED THRU STEGALL NOTARY SERVICE

GRAND GULF NUCLEAR STATION

24 HOUR EMERGENCY DIESEL GENERATOR RUN

DISCUSSION AND JUSTIFICATION

A. AFFECTED TECHNICAL SPECIFICATIONS

The following Technical Specification is affected by the proposed change.

Surveillance Requirements (SR)

3.8.1.14 AC Source - Operating

The proposed Technical Specification and the associated Technical Specification Bases change to be implemented following NRC approval are detailed in Attachment 3.

B. BACKGROUND

At Grand Gulf Nuclear Station (GGNS) the Class 1E AC electrical power distribution systems consist of offsite sources (three incoming lines) and onsite sources (three emergency diesel generators). As required by 10 CFR 50, Appendix A, GDC 17, the design of the AC electrical power system provides independence and redundancy to ensure an available source of power to the Engineered Safety Feature (ESF) systems.

The Class 1E AC distribution system supplies power to three divisional ESF load groups (i.e., Divisions I, II and III), with each division powered by an independent Class 1E 4.16 kv ESF bus. Each ESF bus receives power from either offsite sources or a dedicated onsite emergency diesel generator (EDG). During normal operations, the ESF buses are aligned to their preferred offsite sources. In the event that the preferred offsite source is loss or degrades, the affected ESF bus is automatically transferred to an alternate standby onsite source.

Offsite power is supplied to the GGNS via either two 500 kv lines or one 115 kv line. From the switchyard three electrically and physically separated circuits provide AC power to each 4.16 kv ESF bus. The offsite AC electrical power sources are designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident conditions. A complete description of the offsite power system may be found in the GGNS's Updated Final Safety Analysis Report (UFSAR) Section 8.2.

The onsite standby power source for each 4.16 kv ESF bus is a dedicated EDG. These standby EDG's (i.e., Divisions I, II and III) auto start following generation of either a loss of coolant accident (LOCA) signal (i.e., low reactor water level or high drywell pressure) or an ESF bus degraded or undervoltage signal (refer to Technical Specification 3.3.8.1 - LOP Instrumentation). The automatic transfer of each ESF bus to its standby EDG is initiated only after generation of a bus degraded or undervoltage signal as measured on the 4.16 kv bus. Transfer is accomplished by first opening the incoming offsite feeder breakers and subsequently closing the EDG feeder breaker when the generator has reached rated speed and voltage. This arrangement lessens the likelihood that the offsite source (i.e., grid) and the onsite sources remain paralleled during periods of degraded grid conditions.

For Divisions I and II, prior to auto connecting the EDG to the ESF bus (i.e., closing EDG output breaker), the breakers connecting the buses to the offsite sources are opened and all bus loads except ESF 480 volt load center feeders are tripped. The same signal that initiates the tripping of the offsite feeder breakers also causes all loads to be stripped from the 4.16 kv bus. Loads are sequenced back onto the bus following closure of the EDG output breaker to the ESF bus, in a predetermined sequence in order to prevent overloading the standby emergency power source. Load shedding and sequencing for Divisions I and II is discussed in detail in the GGNS's UFSAR Section 8.3.1.1.3.

For Division III (High Pressure Core Spray - HPCS) loads are not shed and thus not required to be sequenced back onto the bus. However, the design of the HPCS system ensures that the offsite and onsite source will not continue to operate in a parallel mode following receipt of either a LOCA or LOP signal. If in parallel operation prior to the occurrence of a LOCA signal, the HPCS EDG output breaker will trip open and not be automatically reclosed unless the preferred offsite source of power is loss similar to the Division I and II designs. Following the receipt of a LOP signal, the offsite feeder breakers will trip open.

Currently, the GGNS Technical Specification requires that the operability of each EDG be demonstrated every 18 month by operating each EDG for 24 hours at specific load conditions. In order to achieve the required load conditions, the selected EDG is operated in parallel with offsite sources. Because of the perceived vulnerability that exists while paralleled to an offsite source, the current Technical Specification prohibits these tests from being performed while the unit is in Mode 1 or 2. The Staff's concern, as expressed in Information Notice 84-69, is that a possible fault on the offsite system could cause lockout of the ESF bus or trip the EDG itself. In such case the ability of the unit to respond to an emergency could be reduced.[1]

C. PROPOSED TS CHANGES

The proposed change to the Technical Specification is to modify Note 2 to Surveillance 3.8.1.14. Presently Note 2 prohibits the performance of the 24 hour diesel maintenance run while the unit is in either Mode 1 or 2. The proposed change would remove this restriction thus allowing the 24 hour run to be performed during any mode of operation (i.e., Modes 1, 2, 3, 4 or 5).

The second part of Note 2 would remain providing clarification that credit may be taken for unplanned events to satisfy the requirements of 3.8.1.14.

---

[1] The Technical Specification Bases denotes the reason for Note 2 as being a concern for potentially tripping the plant if the surveillance were performed during Modes 1 and 2. While performance of this surveillance could present a potential challenge to the continued operation of the unit, it doesn't present a greater challenge than many other surveillances performed on a more frequent basis (e.g., SR 3.8.1.3). The decision of whether to perform this surveillance during power operation should be made just as with any other surveillance that presents a potential trip of the unit. It is rather EOI's opinion that the more important concerns with SR 3.8.1.14 are as expressed in IN 84-69 and not whether performance of the surveillance represents a challenge to continued steady state operation.

D. JUSTIFICATION

The Staff previously expressed concern about the performance of the 24-hour EDG load test while paralleled to the offsite power system. This concern, which is based on the common-mode vulnerability of the offsite and onsite sources during the test duration, led to restricting the performance of the test during periods when the reactor was shutdown (i.e., Modes 3, 4 or 5).

The specific Staff concern was that if a fault or grid disturbance were to occur while an EDG was connected in parallel with the offsite system, the availability of the EDG for subsequent emergency operation could be effected. Specifically, the EDG or its generator breaker could trip and thus require local operator action to restore. In these instances, the response of the ESF systems could be slower than assumed in the supporting accident analyses.

Recently, the Staff has approved several licensees' requests for eliminating the Mode 1 and 2 restrictions when performing the 24 hour EDG runs. This approval has been based on the existence of unique EDG design features and/or special provisions. These features and/or special provisions must ensure that paralleled operation of the EDG with offsite sources will not prevent the EDG from performing its assumed safety functions. Of particular interest is the response of a paralleled EDG to a LOCA signal, a loss of offsite power signal or coincident signals. Each unique situation is discussed in additional details below.

RESPONSE TO LOCA

The first action after generation of a LOCA signal is the shedding of all loads, except feeders to 480 volt load centers, off the ESF buses (Divisions I and II only). Loads are sequenced back onto the ESF bus once appropriate bus voltage and frequency is confirmed. The timing of the sequencing is the same regardless of whether the ESF buses are energized from offsite or onsite sources. This makes the LOCA sequencing a function solely of when ESF bus voltage becomes available without memory of past conditions or knowledge of present power source.

Regardless of whether the EDG's are in parallel operation or in its normal standby mode, the generation of a LOCA signal is an emergency start signal for all three of the EDG's. In either case (i.e., paralleled or normal standby) an emergency start signal automatically bypasses selected EDG trips. For Divisions I and II a LOCA signal retains only three EDG trips active -- engine overspeed, generator differential and low lube oil pressure. For Division III following a LOCA signal two EDG trips remain active -- engine overspeed and generator differential. Interlocks to the EDG breakers and parallel circuits cause the EDG to automatically reset to ready-to-load operation if a LOCA signal is received during operation in the test mode. Ready-to-load operation is defined as the EDG running at rated speed and voltage with the EDG output breaker open. If offsite power is available, the EDG will continue to run in the ready-to-load condition.

Of significance is that all three EDG's response to a LOCA signal as an emergency start thus overriding the test start signal and removing selected engine/generator trips from

the active trip circuitry. Continued operation of the EDG's in parallel with offsite sources is automatically terminated following receipt of a valid LOCA signal thus preventing subsequent failure of offsite sources from affecting performance of the EDG's safety function.

RESPONSE TO LOCA COINCIDENT WITH LOSS OF OFFSITE POWER

In accordance with the GGNS UFSAR Chapter 15 analysis, the design basis accident (DBA) is the occurrence of a LOCA coincident with a LOP. Per the assumptions of this analysis, ESF systems are actuated following receipt of the LOCA signal. Thus the event is initiated by the occurrence of the LOCA. The simultaneous LOP is assumed only to ensure a bounding case for the assumed subsequent single failure (i.e., loss of one ESF division). In other words, the UFSAR makes no attempt to analyze all possible permutation of event sequences but rather assumes a LOCA to be the most credible bounding event.

Consistent with the Chapter 15 analysis any EDG test would be terminated by the receipt of the LOCA signal. In this instance, the LOCA signal takes precedence resulting in system response as previously described to the receipt of a LOCA signal singularly. However; in this case since offsite power is lost concurrent with the LOCA signal, the EDG will automatically be transferred back onto the ESF bus following the tripping of offsite feeder breakers. The bus, once isolated from the offsite grid, would be reenergized by the EDG output breaker reclosing. In this instance, the reenergization of the ESF bus will actually be slightly faster than the assumed UFSAR time since the EDG would already be at rated speed and voltage and thus need only have its output breaker reclosed to energize the bus.

It should be noted that a review has been performed that demonstrates that the EDG's will not trip or be rendered inoperable with a concurrent LOP/LOCA signal. The review demonstrates that the EDG's are designed to withstand the stresses generated by any credible offsite fault. Also, the review demonstrates that paralleled operation of the EDG's will be terminated prior to any credible fault causing the EDG to trip or be locked-out.

RESPONSE TO LOSS OF OFFSITE POWER

Each 4.16 kv ESF bus has its own independent loss of power (LOP) instrumentation and associated trip logic. The voltage for Division I, II and III buses is monitored at two levels, which may be considered as two different undervoltage functions: loss of voltage and degraded voltage. See Technical Specifications 3.3.8.1 (LOP Instrumentation) for actual setpoints.

Actuation of the LOP instrumentation results in an automatic start signal for its associated EDG. For Division 1 and 2, prior to connecting the EDG to its appropriate bus, all loads are shed except feeders to 480 volt load centers. Provisions are built into the automatic sequences to recognize a grid undervoltage condition and to automatically place the EDG on the bus after tripping the incoming offsite source feeder breaker. Should a LOP condition occur while the EDG is being operated in parallel, the incoming

offsite feeder breakers and EDG breakers (Div. I and II only) would open and the EDG would switch from parallel operation to isochronous mode picking up the loads on the bus.

Unlike Division I and II, Division III does not have an automatic load shedding and sequencing. However; as with Division I and II, Division III does have undervoltage protection that activates to open incoming feeder breakers thus separating the onsite source from a degraded grid condition.

For all three EDG's, the auto start due to the actuation of LOP instrumentation is not an emergency start and thus all normal EDG protective trips remain active (see sections 8.3.1.1.4.1 and 8.3.1.1.4.2.10 of the GGNS UFSAR). While the presence of a loss of preferred power signal may be indicative of either a failure of the offsite power source(s) or some type of fault on the local ESF bus, it is not indicative of the occurrence of a design basis event requiring emergency (i.e., minimal protective trips) EDG response. This design was reviewed and approved by the Staff as documented in their Safety Evaluation Report dated September 1981, Section 8.3.1.

In accordance with the GGNS system design, it is possible that an EDG started as a result of a LOP signal could trip due to some engine/generator protective trip (as previously noted protective trips are not bypassed due to only a LOP signal). It is also possible that this trip could result in the actuation of a generator lockout. In this instance, local operator action would be required (i.e., resetting lockout) prior to the EDG restarting and/or resequencing onto the bus following a subsequent signal (either emergency or non-emergency). For emergency starts (LOCA or emergency manual), local operator action would only be required if a generator lockout protective trip had previously actuated.

One of the concerns expressed by the Staff has been that a possible fault on the offsite system could cause lockout of the ESF bus or trip the EDG itself and as a result delay the unit's response to an emergency condition. While it is possible to postulate that some type of grid or bus fault could result in the actuation of an EDG protective trip/lockout, it is EOI's opinion that any delay in EDG response time would be considered acceptable due to:[2]

1. the less critical nature of EDG start/load times for LOP,

2. the low probability of subsequent events occurring following the initial LOP and

3. procedural requirements that would tend to minimize EDG response times.

---

[2]In proposing the subject Technical Specification change request it was not EOI's intention to do an exhaustive review of relay actuation for an almost unlimited number of possible sequence of events and/or scenarios. Rather the approach taken was to confirm the possibility that an EDG lockout could occur. Then assuming as worst case that the lockout actuated determine whether this was an acceptable condition. Furthermore, EOI did not attempt to quantify the frequency with which such an event could occur (i.e., actuation of lockout relay). However, it is EOI's opinion that the likelihood of such an event occurring is low based on our past experience of operating in a similar configuration when performing surveillance requirement 3.8.1.3 on at least a monthly basis.

A LOP, unlike a LOCA, does not present an immediate challenge to the fuel cladding integrity, reactor water level control or to containment parameters as demonstrated by the bounding 4 hour Station Blackout coping analysis contained in GGNS's UFSAR Appendix 8-A. Given that the only occurrence has been either the loss of offsite power or an individual bus fault, it is not necessary that the EDG respond in the same manner as for the Chapter 15 DBA. In this scenario, there would exist ample time for the operator to recover the EDG if plant conditions warranted such action.

In addition, the probability of a subsequent event occurring (e.g., LOCA) within a relatively short time period following the initial LOP signal would be extremely low. In fact EOI has determined based on results from the GGNS IPE that the probability of having a LOP and a LOCA within a given 24 hour period is 1.6E-8/yr. ANSI/ANS 52.1-1983 directs that events of frequency <1E-6/yr, on a best estimate basis, need not be considered for design. It is therefore EOI's opinion that to assume a coincident LOP/LOCA occurring within the time frame of the test is not a credible event.

Finally, any potential delay in EDG response time would be minimized by the way in which the test is performed. Per procedural requirements, prior to beginning the test suitable communications between the Control Room and the local EDG Room must be established. Also during the first two hours of the 24 hour run, the EDG must be closely monitored by collecting local data every half an hour. Following the first two hours of operation this local data is collected hourly. These procedural requirements help ensure timely local operator response to any abnormal EDG conditions and subsequent recovery from any such event.

The discussion of this possible scenario is included for completeness only. It has in fact very little relevance to the acceptability of the proposed Technical Specification change. The testing of an EDG, regardless of the mode of operation in which the test is performed, does not create or increase the possibility of experiencing a fault on the offsite system. In fact, given the existing EDG design one could postulate a similar scenario regardless of the Mode during which the test was being performed or even if the EDG were in its normal standby mode. Of greater importance is the fact that there exist design features that automatically terminate continued paralleled operation of offsite and onsite sources if a LOP should occur during performance of the surveillance. These features prevent the testing of an EDG from introducing a new or different type of failure.

ADDITIONAL CONSIDERATIONS

In addition to the existing system design features, there are other factors that should be considered when evaluating the acceptability of this proposed Technical Specification change. In particular, there are other Technical Specification Surveillance Requirements that are of interest as it relates to the proposed change.

Current surveillance testing required by SR 3.8.1.3 results in the EDG's being operated in parallel operation with the grid on at least a monthly basis. Therefore, the requested Technical Specification change will not result in a new or different configuration of any

system. The only change will be the time spent in this configuration during Modes 1 or 2 will increase over a given 18 month period.

The ability of each EDG to survive a load reject without tripping is verified every 18 months per Technical Specifications 3.8.1.10. This surveillance would simulate an EDG operated in parallel with the grid following receipt of either a LOCA or LOP signal and having its output breaker trip open separating it from paralleled operation with the grid. This surveillance will remain and thus continue to confirm the ability of the EDG's to survive a total load reject.

The other Technical Specification Surveillance of particular interest is 3.8.1.17. This surveillance requirement demonstrates on an 18 month frequency the capability of the EDG to revert to the ready-to-load status following a LOCA signal while operating in parallel test mode. Demonstration of the test mode override ensures that the EDG availability under accident conditions is not compromised as a result of testing.

Finally there are some special administrative provisions that may be taken to appropriately manage any risk presented by performing the EDG 24 hour test during Modes 1 and 2:

1. Only one EDG will be tested in parallel to the offsite grid in accordance with SR 3.8.1.14 at a time.

2. Appropriate precautions/limitations will be provided that cautions against conducting the 24 hour test during periods of severe weather, unstable offsite grid conditions or maintenance and test conditions that have an adverse effect on the test.

3. No additional maintenance or testing will be performed or planned to be performed on required safety systems, subsystems, trains, components and devices that depend on the remaining EDG's as sources of emergency power.

Each of the above precautions/limitations will be included in appropriate procedural guidance following approval of this Technical Specification change request by the Staff and prior to performing the 24 hour run with the unit in either Mode 1 or 2.

E. CONCLUSION

In conclusion, the performance of the 24 hour diesel maintenance runs while the unit is in Mode 1 or 2 will not adversely affect the ability of either of the three EDG's to response to design basis events per the UFSAR. In all cases following generation of either a LOCA or LOP signal, occurring individually or coincidentally, the system design will automatically terminate continued paralleled operation with offsite sources thus preventing this mode of operation from introducing a new or different failure from those previously assumed in the accident analysis. Since the response of an EDG in testing is essentially identical to that of a EDG in normal standby, the unit will continue to satisfy the single failure criteria and remains within the assumed design basis during the performance of the 24 hour EDG test regardless of the unit's mode of operation.

F. SIGNIFICANT HAZARDS CONSIDERATION

Entergy Operations, Inc. proposes to change the current Grand Gulf Nuclear Station Technical Specifications. The specific change is to modify note 2 to Surveillance 3.8.1.14. Presently, this note prohibits the performance of the 24 hour diesel maintenance run while the unit is in either Mode 1 or 2. The proposed change would remove this restriction thus allowing the 24 hour run to be performed during any mode of operation (i.e., modes 1, 2, 3, 4 or 5).

The Commission has provided standards for determining whether a no significant hazards considerations exists as stated in 10 CFR 50.92 (c). A proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

Entergy Operations, Inc. has evaluated the no significant hazards consideration in its request for this license amendment and determined that no significant hazards considerations results from this change. In accordance with 10 CFR 50.91(a), Entergy Operations, Inc. is providing the analysis of the proposed amendment against the three standards in 10 CFR 50.92(c). A description of the no significant hazards consideration determination follows:

I. The proposed change does not significantly increase the probability or consequences of an accident previously evaluated.

The GGNS UFSAR assumes that the AC electrical power sources are designed to provide sufficient capacity, capability, redundancy and reliability to ensure that the fuel, reactor coolant system and containment design limits are not exceeded during an assumed design basis event. Specifically, the UFSAR assumes that the onsite EDG's provide emergency power in the event offsite power is loss to either one or all three ESF buses. In the event of a loss of preferred power, the ESF electrical loads are automatically connected to the EDG's in sufficient time to provide for safe reactor shutdown and to mitigate the consequences of a design basis accident such as a LOCA.

The proposed change to permit the 24 hour testing of the EDG's during power operation does not increase the chances or consequences of any previously evaluated accident. The capability of the EDG's to supply power in a timely manner will not be compromised by permitting performance of EDG testing during periods of power operation. Design features of the EDG's and electrical systems ensures that if a LOCA or LOP signal, either individually or concurrently, should occur during testing that the EDG would be returned to its ready-to-load operation (i.e., EDG running at rated speed and voltage separated from the offsite sources) or separately connected to the ESF bus providing ESF loads. As such, an EDG being tested is considered to be

Operable and fully capable of meeting its intended design function. Additionally, the testing of an EDG is not a precursor to any previously evaluated accidents.

Therefore, the proposed change allowing testing of EDG's during power operation will not significantly increase the probability or consequences of an accident previously evaluated.

II. **The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.**

As previously discussed, the proposed change to permit the performance of EDG testing during power operation will not affect the operation of any system or alter any system's response to previously evaluated design basis events. The EDG's will automatically transfer from the test configuration to the ready-to-load configuration following receipt of a valid signal (i.e., LOCA or LOP). In the ready-to-load configuration, the EDG will be running at rated speed and voltage separated from the offsite source capable of automatically supplying power to the ESF buses in the event that preferred power is actually loss.

Surveillance Requirement 3.8.1.17 demonstrates that the EDG will automatically override the test mode following generation of a LOCA signal. In addition the ability of the EDG's to survive a full load reject is verified by the performance of surveillance requirement 3.8.1.10. These existing surveillance requirements along with system design features ensures that the performance of EDG testing during power operation will not create the possibility of a new or different kind of accident from any previously evaluated.

III. **The proposed change does not involve a significant reduction in a margin of safety.**

The AC electrical power sources are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, reactor coolant system and containment design limits are not exceeded. Specifically, the EDG's must be capable of automatically providing power to ESF loads in sufficient time to provide for safe reactor shutdown and to mitigate the consequences of a design basis accident in the event of a loss of preferred power.

Testing of EDG's during power operation will not affect the availability or operation of any offsite source of power. In addition, the EDG being tested remains capable of meeting its intended design functions. Therefore the proposed change to the Technical Specification Surveillance Requirement 3.8.1.14 will not result in a reduction in a margin of safety.

MARK-UP OF AFFECTED TECHNICAL SPECIFICATIONS AND BASES

GRAND GULF NUCLEAR STATION