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June 12, 2001

2CAN060101

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Subject: Arkansas Nuclear One – Unit 2
Docket No. 50-368
License No. NPF-6
One Time Technical Specification Change Request Regarding Emergency Diesel Generator Allowed Outage Time Extension

Gentlemen:

Attached for your review and approval is a proposed change to the Arkansas Nuclear One Unit 2 (ANO-2) Technical Specifications (TS) 3.4.4 and 3.8.1.1. These changes are requested to support a one-time allowance to extend the allowable outage time (AOT) for each emergency diesel generator (EDG) to ten days. ANO-2 requests that the extension be applicable for the remainder of the present cycle (cycle 15) and for the next cycle (cycle 16, ending fall 2003). The change to TS 3.8.1.1 will allow extending the EDG AOT from 72 hours to 10 days for each inoperable EDG. While the EDG is out of service, ANO-2 will maintain the Alternate AC Diesel Generator (AACDG) available. When the AACDG is unavailable the AOT will remain at 72 hours. The change to TS 3.4.4 is required to ensure the associated action for the pressurizer proportional heaters is consistent with the proposed changes to TS 3.8.1.1. Additionally, the bases of TS 3.0.5, which includes an example of the EDG out-of-service time, will be modified to reflect the proposed change to the EDG AOT.

Approval of these changes will allow flexibility in scheduling maintenance activities, reduce refueling outage duration, and improve EDG availability during plant shutdown operations.

This letter provides a deterministic review of the proposed change and references the Combustion Engineering Owners Group Joint Applications Report (JAR) for Emergency Diesel Generators AOT Extension (CE NPSD-996) dated May 1995. However, Entergy is also providing a best estimate safety assessment that credits the AACDG for change in core damage frequency. ANO-2 previously submitted a request dated May 19, 1995 (2CAN059501) with a follow-up response to a request for additional information dated February 27, 1996 (2CAN029609) based on the JAR. The request was withdrawn by

A001

letter dated December 11, 1998 (0CAN129808). The withdrawal was due to a NRC staff requirement that a configuration risk management program be implemented to support the request. A configuration risk management program has now been implemented at ANO as required by the final maintenance rule "Requirements for Monitoring the Effectiveness of Nuclear Power Plants" 10 CFR 50.65 (a) (4).

The proposed change has been evaluated in accordance with 10CFR50.91(a)(1) using criteria in 10CFR50.92(c) and it has been determined that this change involves no significant hazards considerations. The bases for these determinations are included in the attached submittal. There are no new commitments contained in this letter.

Entergy Operations requests that the effective date for this TS change to be within 60 days of approval. ANO desires to perform EDG inspection and surveillance activities prior to the next refueling outage, which is in the spring of 2002. Therefore, approval of this change is requested by December 15, 2001. Although this request is neither exigent nor emergency, your prompt review is requested.

I declare under penalty of perjury that the foregoing is true and correct. Executed on June 12, 2001.

Very truly yours,

C. G. Anderson
Vice President, Operations
Arkansas Nuclear One

CGA/dm
Attachments

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ATTACHMENT 1

TO

2CAN060101

PROPOSED TECHNICAL SPECIFICATION

AND

RESPECTIVE SAFETY ANALYSES

IN THE MATTER OF AMENDING

LICENSE NO. NPF-6

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-368

DESCRIPTION OF PROPOSED CHANGES

The proposed change to Technical Specification (TS) 3.8.1.1 will allow a one time extension of the allowed outage time (AOT) for an inoperable emergency diesel generator (EDG) from the existing limit of 72 hours to 10 days for each inoperable EDG. Additionally, while the EDG is inoperable the alternate AC diesel generator (AACDG) will be available. When the AACDG is unavailable, the AOT will revert to 72 hours. Also included is a re-formatting of the action section of TS 3.8.1.1 to address human factors concerns. TS 3.8.1.1 actions b, c.4, and e contain the technical changes that are addressed in this proposed change.

The proposed change to TS 3.4.4 will make action (b) consistent with the proposed EDG AOT extension. Additionally, the example included in the bases associated with TS 3.0.5 will be changed to reflect the proposed EDG out of service time.

The change is based on the Combustion Engineering Owners Group (CEOG) Joint Applications Report (JAR) for Emergency Diesel Generators AOT extension dated May 1995. Furthermore, reliance on the AACDG adds additional defense in depth for the electrical system that was not considered when the JAR was prepared.

BACKGROUND

Emergency Diesel Generators

Arkansas Nuclear One – Unit 2 (ANO-2) is equipped with two seismically qualified, Class 1E, diesel engine driven generators that supply backup electrical power to the 4160 volt (V) vital AC busses. Each engine is designed to automatically start and tie-on to its respective 4160 V engineered safety features (ESF) bus in the event of a bus under voltage condition on either the 4160 V bus or its associated 480 V motor control center. The EDGs also receive an auto start command on a safety injection actuation signal, but will not load unless a bus under-voltage condition exists.

Each EDG is designed to start automatically upon receipt of a start demand, attain rated speed and voltage within 15 seconds, and sequentially accept ESF loads. Each EDG is sized to accommodate loading all anticipated ESF actuated equipment with a continuous load rating of 2850 kilowatts (kW) and a 7-day rating of 3250 kW. Under procedurally controlled conditions, the EDGs may be aligned to supply the adjacent ESF bus via cross-tie breakers or back feed the non-class 1E 4160 V feeder bus to power select non-ESF loads.

The EDGs are designed for manual operation from either the local control panel or the operating panel in the control room. This provision allows operation for surveillance

testing and manual start and load operations, as well as local operations, if an event were to render the control room inaccessible.

The current EDG reliability is 0.98 with a site goal of 0.95 based on the criteria set forth in NSAC 108, "*The Reliability of Emergency Diesel Generators at US Nuclear Power Plants*". The 0.98 reliability value is based on the last 100 starts and load runs.

Alternate AC Diesel Generator

In addition to the EDGs, ANO has installed a diesel generator pursuant to the requirements of 10 CFR 50.63, Loss of All Alternating Current Power, paragraph (c)(2), Alternate AC Source. The AACDG is a 16 cylinder, four stroke, turbocharged, diesel engine driven generator rated at 4400 kW continuous output and 5320 kW overload. Its size is based on the capability to supply the licensing basis loss of offsite power (LOOP) loads of any one of the four vital buses, well in excess of that required to support the station blackout mission of 3100 kW. The AACDG is capable of supplying 4160 V power to ANO-1 vital buses A3 or A4, or ANO-2 vital buses 2A3 or 2A4. It can also supply non-vital 4160V buses A1 for ANO-1 or 2A1 for ANO-2. The buses can be supplied in any combination as long as the total load does not exceed the engine load rating. The design considerations for the AACDG assumed the engine would be started from the control room and available to power the safety buses within 10 minutes of the diagnosis of a station blackout condition. The 10 minute criterion is a bounding value from Section 3.2.5 of NRC Regulatory Guide (RG) 1.155, Station Blackout, and 10 CFR 50.63(c)(2) such that, if demonstrated, precludes the necessity for performing a specific coping analysis. The AACDG output was tied to an ANO-1 vital bus (A3) during testing on March 22, 1995 and to an ANO-2 vital bus on October 11, 1995. During these tests, an actual blackout event was simulated and the time to energize the buses was recorded. In each case the time was less than the 10-minute criterion.

The AACDG is completely independent from off-site power and the EDGs, with the exception of the bulk fuel oil storage system. The AACDG, all support systems, and attendant electrical buses are housed in a dedicated building located outside the power block, inside the protected area fence. The AACDG is discussed in section 8.3.3 of the ANO-2 SAR.

The AACDG is a non-Q, manually started and loaded alternate source of AC power. Operation and loading of the AACDG is possible from the ANO-2 control room or locally. An existing operating procedure contains instructions for operating the AACDG under various circumstances such as starting, loading, unloading, aligning to electrical buses, emergency starting/loading, and starting/loading with failure of both controlling computers. The procedure also contains instructions for the quarterly full load test and an 18-month test that verifies starting and loading in less than 10 minutes.

The AACDG reliability is tracked using the same criteria utilized to monitor EDG reliability, NSAC 108. The reliability of the AACDG is based on its total run history, 99 starts and 58 load runs. Presently, the AACDG has proven to have a reliability factor of 0.97. The ANO site goal is 0.95.

Pressurizer Proportional Heaters

The pressurizer proportional heaters ensure that RCS subcooling margin will be maintained >20 °F for a period of 45 hours following loss of off-site power. This time period includes a period of one-half hour at the beginning of the transient in which the heaters are unavailable. Two banks of vital-powered pressurizer proportional heaters are installed at ANO-2. Unlike most TS components for which the provisions of TS 3.0.5 can be applied, emergency power is required to consider the proportional heaters operable since the aforementioned bases assumes a loss of offsite power event. If emergency power, in this case the EDG, is not available, the associated proportional heater bank must be considered inoperable. Furthermore, TS 3.4.4 requires the inoperable heater bank to be returned to an operable status, like the EDG, within 72 hours. If the heater bank is not restored to an operable status within this period, the plant must be placed in hot shutdown within the following 12 hours. The pressurizer proportional heaters are discussed in Section 5.5.10 of the ANO-2 SAR.

BASIS FOR PROPOSED CHANGE

EDG AOT Extension

Should an EDG become inoperable for any reason, the current allowable outage time (AOT) allowed in ANO-2 Technical Specification (TS) 3.8.1.1 is 72 hours. If the EDG cannot be restored to an operable status within 72 hours, the TS actions require the plant be placed in hot standby within the following six hours and in cold shutdown within the following 30 hours. The proposed TS amendment would allow a one time AOT extension for each EDG to 10 days based on the availability of the alternate AC diesel generator (AACDG). If the AACDG is not available, the AOT will revert to the present 72 hours. The 72 hour EDG AOT clock starts when the AACDG becomes unavailable. When the AACDG becomes available again, the ten-day AOT will be re-entered with a start time of the original time it was entered for the EDG outage.

The change is desired to allow performance of selected corrective and preventative maintenance activities on-line. It is based on a number of expected enhancements to the maintenance process. Some examples are:

Allow for increased flexibility in the scheduling and performance of preventative maintenance.

Reduction in the number of individual entries into limiting conditions for operation action statements by providing sufficient time to perform related maintenance task within a single entry.

Allow better control of resource allocation. During outage maintenance windows, plant personnel and resources are spread across a large number and wide variety of maintenance tasks. Allowing on-line maintenance gives the plant the flexibility to focus more quality resources on required or elected EDG maintenance.

Avert unplanned plant shutdown and minimize potential for requests for notice of enforcement discretion. Risks incurred by unexpected plant shutdowns can be comparable to and often exceed those associated with continued power operation.

Improve EDG availability during shutdown modes.

Currently, corrective maintenance and preventative maintenance activities are performed on each EDG during each refueling outage (18-month frequency). These activities are worked around the clock and can take four to five days, depending largely upon the amount of corrective maintenance. The amount of corrective maintenance will vary from cycle to cycle, based on equipment conditions, industry issues, etc.

JAR for Emergency Diesel Generator (EDG) AOT Extension (CE NPSD-996)

In May of 1995 the CEOG submitted a JAR to the NRC for review and approval. The report provided the results of an evaluation of the extension of the AOT for each EDG from its present value to seven days with a once per fuel cycle allowance to extend the AOT to 10 days for each EDG. The JAR provides generic information supporting the proposed AOT changes, as well as, the necessary plant specific information to demonstrate the impact of these changes on an individual plant basis. The evaluation includes a consideration of the risk associated with the "at power," transition," and "shutdown" operations.

The change in risk resulting from the extended EDG AOT was evaluated using plant specific information from each of the participating CEOG members. The AOT analyses included in the JAR for ANO-2 were performed using the cutsets reported in the ANO-2 IPE Probabilistic Risk Analysis (PRA) Summary Report submitted to the NRC in letter 2CAN089201. No credit was taken for the AACDG in the IPE PRA analysis. Therefore, the additional administrative restriction proposed, which requires the AACDG to be available during the one time 10 day AOT extension for each EDG, further reduces the risk conclusions contained in the IPE PRA, which were used in the JAR. In our letter, 0CAN059603, dated May 2, 1996, it was shown that the core damage frequency (CDF) associated with a 14 day AOT, with credit for the availability of the AACDG, is less than that previously calculated and presented in the JAR. Thus, the assessment contained in

the JAR is applicable to this submittal and provides a conservative estimate of the risk associated with a one-time AOT extension.

Alternate AC Diesel Generator

ANO has an AACDG available as a backup to the EDGs. ANO-2 is committed to ensuring the AACDG remains available and protected for the duration of the EDG out-of-service window to effectively reduce the associated risks. Extra precautions in the form of compensatory measures have been identified to protect sources of power to the extent practical and that precautions are taken with regard to the steam-driven emergency feedwater pump.

The AACDG is tested periodically in accordance with station procedures to ensure that the AAC power supply is available upon demand. A quarterly test is performed that ensures that the diesel starts upon demand, ramps at a designated kW/sec, synchronizes to station loads and carries the required bus loads. In addition, diesel vibration data is taken and auxiliary systems are checked. During the 18-month test, the AACDG is also tested to ensure that the diesel engine meets its required 10-minute timing from start to its loaded condition.

The following precautions should further reduce the risk during the AOT extension:

- The AACDG will be verified available once per 8 hours while the EDG is out of service (OOS). This is consistent with the TS requirement to verify the off-site power sources are operable. In addition, quarterly surveillance testing of the AACDG will be verified satisfactorily completed within its scheduled frequency. The quarterly test includes connecting the AACDG to the in-house power system.

- The AACDG will be treated as a backup to the inoperable EDG and as a protected train component. The AACDG and the operable EDG will be posted and controlled as "Protected Equipment."

- Operations personnel on ANO-1 will be notified of the EDG maintenance and the dedication of the AACDG to ANO-2.

- The AACDG will not be used for non-safety functions (i.e., power peaking to the grid).

- No discretionary switchyard maintenance will be allowed. In addition, no discretionary maintenance will be allowed on the main, auxiliary, or startup transformers associated with the unit. Both the transformers and the switchyard remain posted year-round, preventing unauthorized access. This exclusion does not apply to non-intrusive routine walk-downs.

- The system dispatcher will be contacted once per day and informed of the EDG status along with the power needs of the facility.

- Although satisfactory grid stability is expected, should a tornado or thunderstorm warning be issued for the local area, an operator will be dispatched to the AACDG. The operator will be available should local operation of the AACDG be required as a result of on-site weather-related damage.

- The steam-driven emergency feedwater pump will be controlled as "Protected Equipment."

- The ANO-2 On-Shift Operations crew will discuss and review appropriate normal and emergency operating procedures upon or prior to assuming the watch for the first time after having scheduled days off while the AOT is in effect.

- The ANO-2 Operations crews will be briefed concerning the ANO-2 EDG activities, including compensatory measures established and the importance of promptly starting and aligning the AACDG following instruction of the ANO-2 Shift Manager upon the loss of power event. This briefing will be performed upon or prior to assuming the watch for the first time after having scheduled days off while the AOT is in effect.

- No maintenance or testing that affects reliability of the ANO-2 train associated with the operable EDG will be scheduled during the maintenance on the OOS EDG. Testing and maintenance of other ANO-2 safety-related components will be minimized. Testing or maintenance on the safety-related ANO-2 systems or components that must be performed while the AOT is in effect will be evaluated as required by 10 CFR 50.65 (a) (4). Tests on safety-related equipment that are scheduled during the EDG maintenance window will be reviewed and the risk impact assessed prior to performance, when possible. Typically these tests will be completed prior to removing the EDG from service while maintaining the TS specified surveillance interval described in TS 4.0.2.

- Unless sufficient evidence is discovered to indicate the potential for common cause failure of the EDG, no additional surveillance testing will be performed on the operable EDG. This reduces the risk of introducing unnecessary perturbations on safety-related equipment and is consistent with the guidance within Generic Letter 99-01.

- Maintenance activities on the ANO-1 EDGs will typically not be scheduled simultaneously with maintenance activities on an ANO-2 EDG.

Most of the above compensatory actions are part of documented and controlled programs at ANO-2 and are established during any at-power EDG outage. Station management approval is required to deviate from such compensatory measures.

Like the EDGs, the AACDG system unavailability is monitored. It is a risk-significant Maintenance Rule system performing well within the unavailability performance criterion. Availability over the previous 12 months has been approximately 99%.

ANO-2 Risk Management Program

The Risk Management Program at ANO-2 is updated routinely for changes in physical plant parameters and due to industry insights gained over years of experience. Currently, the Equipment Out Of Service (EOOS) model is utilized daily by the Planning & Scheduling Liaison (a member of the Operations department maintaining a senior reactor operator license) to evaluate the risk associated with maintenance activities. In addition to the performance of a quantitative assessment by EOOS, the Planning & Scheduling Liaison performs a qualitative assessment daily. This qualitative assessment covers a broad range of areas including, trip or transient potential, reactivity mismanagement potential, redundant equipment availability, cross unit impact, red train - green train separation, fire, flooding, and severe weather contingencies.

As required by 10 CFR 50.65 (a) (4) prior to performing scheduled maintenance a thorough evaluation is performed to consider the potential risk associated with the activity. This may preclude taking other safety system equipment out of service for maintenance.

The current EDG AOT of 72 hours under the existing technical specifications does not consider an additional backup power supply to be available to mitigate a loss of offsite power. The proposed change will ensure that an alternate onsite diesel generator will be available while the EDG is out of service. Therefore, this change can be considered to be a more responsive action than that contained in the current TSs.

Safety Assessment

An assessment of the change in the ANO-2 core damage frequency (CDF) due to allowing ANO-2 to continue at power operation beyond the TS AOT of 72 hours has been performed[1]. Using the ANO-2 Internal Events Level-1 PSA model, the CDF associated with two at-power plant conditions was assessed. This assessment credited the availability and tying in of the ANO AACDG. It should be recognized that Entergy is still developing a certified model based on recent design changes for replacement steam generators. The following summary is a best estimate evaluation using current modeling techniques that

[1] This assessment was performed on the ANO-2 # 1 EDG, however, these results are conservative for the #2 EDG.

provides a relative change in CDF values. This evaluation does not include future power uprating conditions which will occur in cycle 16. A summary of the results of this risk assessment follows.

Case 1: Baseline ANO-2 CDF
Case 2: 72 hour AOT as allowed by TSs.
Case 3: EDG AOT for an additional 7 days.

The results of these calculations are summarized in Table 1 below:

Table 1

ANO-2 EOOS Model	CDF (/rx-yr)
Case 1. Baseline	2.08E-05
Case 2. EDG AOT for 72 hours	2.10E-05
Case 3. EDG OOS (10 days)	2.14E-05
Change in CDF (from 3 to 10 days)	4.00E-07

Using these results, the estimated change in the annual and the cycle average ANO-2 CDF for an additional 7 days of power operation beyond the current 3 day AOT is provided in Table 2.

Table 2

Extension of EDG OOS Period 7 Days Beyond AOT	Annual Average ΔCDF From Baseline (/rx-yr)	NRC CDF Risk Region
2.14E-05	5.7E-07	III

As noted in the table, the change in the annual average ANO-2 CDF associated with allowing a one time extension OOS time beyond its current 3 day AOT is in Region III (very small risk) of the NRC's CDF acceptance guidelines in Figure 3 of RG 1.174. The 5.7E-07/rx-yr change in CDF is well below the Region II threshold of 1E-6/rx-yr.

It is noted that the ANO-2 EOOS model is an "internal events" model and does not account for "external events" such as seismic events, internal fires, floods, high winds and tornadoes, as well as transportation and nearby facilities accidents. A vulnerability review of these risk contributors was performed during the ANO-2 IPEEE process. Although the ANO-2 IPEEE analyses did not produce a quantitative estimate of the external events contribution to the ANO-2 CDF, these reviews concluded that ANO-2 has a relatively low risk from external events. Since the internal events CDF is well within NRC RG 1.174, Figure 3, Region III and since the external events CDF contribution was determined to be

relatively low, it is concluded that the overall change in the CDF due to the additional 7 day AOT does not contribute significantly to the ANO-2 CDF.

The ANO-2 EOOS model is a Level-1 (i.e., CDF) model and does not calculate the ANO -2 Large Early Release Frequency (LERF). The ANO-2 IPE analysis estimated that the large release accident scenarios account for less than 3% of the total CDF. It is judged that the effect of increasing OOS time on LERF is proportional to the increase of CDF. Using this judgment, the increase in LERF is also within Region III for LERF.

Table 3

Baseline LERF	Increased LERF	Change in LERF	NRC CDF Risk Region
6.30E-07	6.47E-07	1.21E-08	III

TS 3.4.4 - Pressurizer

Action (b) of TS 3.4.4 states: "With the pressurizer inoperable due to an inoperable emergency power supply to the pressurizer heaters, either restore the inoperable emergency power supply within 72 hours or be in at least HOT SHUTDOWN within 12 hours." The proposed change associates this action with proposed TS 3.8.1.1 action b, which allows a one time extension for an inoperable emergency power supply for up to 10 days. During the AOT, the AACDG will be maintained available as described above which would allow power to be supplied to the proportional heaters in the event of a loss of offsite power. Should the AACDG become unavailable, the pressurizer proportional heater AOT will be reduced to 72 hours, with the time starting when the AACDG becomes unavailable.

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

Energy Operations, Inc. is proposing that the Arkansas Nuclear One, Unit 2 Operating License be amended to allow a one time extension of the allowable outage time (AOT) for the Emergency Diesel Generators (EDGs) and the pressurizer proportional heaters from 72 hours to 10 days for a each EDG. Additionally, while in the ten day AOT for the EDG, the Alternate AC Diesel Generator (AACDG) will be available. If at anytime during the AOT the AACDG becomes inoperable, the EDG and pressurizer proportional heater AOTs will be reduced to 72 hours. The 72-hour time clock would start at the point in time the AACDG becomes unavailability. The proposed changes will allow flexibility in scheduling maintenance activities, reduce the duration of refueling outages, and improve EDG reliability during plant shutdown conditions.

When an EDG is out of service (OOS) for maintenance activities, Arkansas Nuclear One (ANO) requires that the redundant train EDG and the AACDG be operable. Although the AACDG does not receive an automatic start signal from either a loss of offsite power or a safety injection actuation signal (SIAS), it is sized such that it is fully capable of carrying the same loads that would be supplied by the EDG.

The proposed change AOT extension may be used one time for each EDG anytime during the remainder of fuel cycle 15 and throughout fuel cycle 16.

An evaluation of the proposed change has been performed in accordance with 10CFR50.91(a)(1) regarding no significant hazards considerations using the standards in 10CFR50.92(c). A discussion of these standards as they relate to this amendment request follows:

1. **Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?**

   Typically, only one EDG is OOS for maintenance activities at any given time. The standby EDG is aligned as required by Technical Specifications (TS) and available for auto start upon demand. Additionally, the AACDG is verified available and capable of being aligned to the Engineered Safety Features (ESF) electrical buses associated with the OOS EDG. The AACDG is sized such that it can carry the loads equivalent to at least one train of Engineered Safety Features (ESF) equipment. In the event of a loss of offsite power while an EDG is OOS, the AACDG will be manually started and loaded. The time delay associated with the manual start of the AACDG will result in a minimal change in the overall risk associated with the ability to reestablish power to ESF equipment upon a loss of offsite power. However, assuming the standby EDG operates as designed it will start upon receipt of the automatic start signal and sequence on loads as required.

The plant can be maintained in a safe configuration or mitigate any accident situations with only one train of ESF components. Reliance upon the AACDG to provide a backup function ensures a minimal change in risk associated with extending the EDG AOT. The EDG AOT of 72 hours under the existing technical specifications does not consider an additional backup power supply to be available to mitigate a loss of offsite power. The proposed change will ensure that an alternate onsite diesel generator will be available while the EDG is out of service. Therefore, this change is considered a more responsive action than that contained in the current TSs.

Therefore, this change does not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. **Will operation of the facility in accordance with this proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?**

The duration of an AOT is determined considering that there is a minimal possibility that an accident will occur while a component is removed from service. Typically, only the single redundant train is available during the AOT with no backup components available to supply the function of the component. The proposed change allows the EDG AOT to be extended one time for each EDG to 10 days with reliance on the AACDG. If the AACDG is not available the AOT is 72 hours. No new modifications are required to allow the AACDG to function.

Therefore, this change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. **Will operation of the facility in accordance with this proposed change involve a significant reduction in a margin of safety?**

The EDG AOT will be 10 days for each EDG if the AACDG is available. However, if the AACDG is not available the EDG AOT will remain at 72 hours. The AACDG supplies backup power to the redundant train of ESF components. The standby EDG, which is typically not aligned in a test mode during the AOT, will be available to automatically start and sequence on loads upon demand. Two trains of ESF components powered from the onsite electrical sources, the standby EDG and the AACDG, will be available in the event of an accident. When the AACDG is not available the current 72 hour AOT will begin. In conclusion, either the AACDG will be available, which will result in two ESF trains being available in the unlikely event of an accident, or the current AOT will apply.

Therefore, this change does not involve a significant reduction in the margin of safety.

Based on the above discussion Entergy Operations has determined that the requested change does not involve a significant hazards consideration.

ENVIRONMENTAL IMPACT EVALUATION

Pursuant to 10CFR51.22(b), an evaluation of the proposed amendment has been performed to determine whether or not it meets the criteria for categorical exclusion set forth in 10CFR 51.22 (c) (9) of the regulations. The basis for this determination is as follows:

The proposed license amendment does not involve a significant hazards consideration as described previously in the evaluation.

As discussed in the significant hazards evaluation, this change does not result in a significant change or significant increase in the radiological doses for any Design Basis Accident. The proposed license amendment does not result in a significant change in the types or a significant increase in the amounts of any effluents that may be released off-site.

The proposed license amendment does not result in a significant increase to the individual or cumulative occupational radiation exposure because performance of EDG maintenance activities does not result in radiation exposure.

ATTACHMENT 2

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS

PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.4 The pressurizer shall be OPERABLE with a water volume of ≤ 910 cubic feet (equivalent to ≤ 82% of wide range indicated level) and both pressurizer proportional heater groups shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

(a) With the pressurizer inoperable due to water volume ≥910 cubic feet, be in at least HOT SHUTDOWN with the reactor trip breakers open within 12 hours.

(b) With the pressurizer inoperable due to an inoperable emergency power supply to the pressurizer heaters then either restore the inoperable emergency power supply ~~within 72 hours~~ as required by TS 3.8.1.1 action b.3 or be in at least HOT SHUTDOWN within 12 hours.

SURVEILLANCE REQUIREMENTS

4.4.4.1 The pressurizer water volume shall be determined to be within its limits at least once per 12 hours.

4.4.4.2 The pressurizer proportional heater groups shall be determined to be OPERABLE.

(a) At least once per 12 hours by verifying emergency power is available to the heater groups, and

(b) At least once per 18 months by verifying that the summed power consumption of the two proportional heater groups is ≥ 150 KW.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system and

b. Two separate and independent diesel generators each with:

1. A day fuel tank containing a minimum volume of 280 gallons of fuel (equivalent to 50% of indicated tank volume),

2. A separate fuel storage system containing a minimum volume of 22,500 gallons of fuel (equivalent to 100% of indicated tank level), and

3. A separate fuel transfer pump.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

~~a. With one offsite A.C. circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite A.C. circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Startup Transformer No. 2 may be removed from service for up to 30 days as part of a preplanned preventative maintenance schedule. The 30-day allowance may be applied not more than once in a 10-year period. The provisions of Specification 3.0.4 are not applicable to Startup Transformer No. 2 during the 30-day preventative maintenance period.~~

a. With one offsite A.C. circuit of the above required A.C. electrical power sources inoperable, perform the following:

1. Demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and
2. Restore the offsite A.C. circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Startup Transformer No. 2 may be removed from service for up to 30 days as part of a preplanned preventative maintenance schedule. The 30-day allowance may be applied not more than once in a 10-year period. The provisions of Specification 3.0.4 are not applicable to Startup Transformer No. 2 during the 30-day preventative maintenance period.

ACTION (Continued)

~~b. With one diesel generator of the above required A.C. electrical power source inoperable, demonstrate the OPERABILITY of both the offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours unless it is determined that a common cause failure does not exists or, unless it is currently in operation or has been demonstrated OPERABLE within the previous 24 hours. Restore the diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

b. With one diesel generator of the above required A.C. electrical power source inoperable, perform the following:

1. Demonstrate the OPERABILITY of both the offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and
2. Demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours except when:
   i. A common cause failure has been determined not to exist, or
   ii. The remaining diesel generator is currently in operation, or
   iii. The remaining diesel generator has been demonstrated OPERABLE within the previous 24 hours, and

Note -For Fuel Cycles 15 and 16 Only
The requirement for diesel generator (EDG) restoration to OPERABLE status may be extended to ten days if the Alternate AC diesel generator (AACDG) is verified available. If the AACDG is found unavailable during this period, the 72 hour restoration period of condition b.3 below is immediately applicable until either the AACDG or the EDG is returned to operable status (not to exceed ten days from the initial diesel generator inoperability). The 10-day allowance may be applied only once for each EDG.

3. Restore the diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

~~c. With one offsite A.C. circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and, if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours (unless it is already operating or has been tested within the last 8 hours). Restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore both offsite circuits and both diesel generators to OPERABLE status within 72 hours of the initiating event or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

c. With one offsite A.C. circuit and one diesel generator of the above required A.C. electrical power sources inoperable, perform the following:

1. Demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and,
2. If the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, then
   i. Demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours except when:
      a. The remaining diesel generator is currently in operation, or
      b. The remaining diesel generator has been demonstrated OPERABLE within the previous 8 hours, and
3. Restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, and

ACTION (Continued)

Action c continued

4. If the required A.C. electrical power sources are restored to OPERABLE status to satisfy action c.3, then restore the inoperable diesel generator as required by action b.3.
5. If both diesel generators are restored to operable status to satisfy action c.3, then restore both A.C. electrical power sources as required by action a.2.

~~d. With two offsite A.C. circuits of the above required A.C. electrical power sources inoperable perform Surveillance Requirement 4.8.1.1.2.a.4 on the diesel generators within the next 8 hours (unless the diesel generators are already operating or have been successfully tested within the past 8 hours). Restore one of the inoperable offsite A.C. circuits to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore both A.C. circuits within 72 hours of the initiating event or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

d. With two offsite A.C. circuits of the above required A.C. electrical power sources inoperable, *perform the following*:

1. Perform Surveillance Requirement 4.8.1.1.2.a.4 on the diesel generators within the next 8 hours except when:
   i. The diesel generator is currently in operation, or
   ii. The diesel generator has been demonstrated OPERABLE within the previous 8 hours, and
2. Restore one of the inoperable offsite A.C. circuits to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, and
3. Restore both A.C. circuits as required by action a.2

~~e. With two diesel generators of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore one of the inoperable diesel generators to OPERABLE status within 2 hours or be in a least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore both diesel generators within 72 hours of the initiating event or be in a least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

e. With two diesel generators of the above required A.C. electrical power sources inoperable, perform the following:

1. Demonstrate the OPERABILITY of the two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and
2. Restore one of the inoperable diesel generators to OPERABLE status within 2 hours or be in a least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, and
3. Following restoration of one diesel generator follow ACTION statement b.3 with the time requirements of that ACTION statement based on the time of initial loss of the remaining inoperable diesel generator.

ATTACHMENT 3

MARKUP OF TECHNICAL SPECIFICATION BASES

operation is not initiated or that higher modes of operation are not entered when corrective ACTION is being taken to obtain compliance with a specification by restoring equipment to OPERABLE status or parameter to specified limits. Compliance with ACTION requirements that permit continued operation of the facility for an unlimited period of time provides an acceptable level of safety for continued operation without regard to the status of the plant before or after a mode change. Therefore, in this case, if the requirements for continued operation have been met in accordance with the requirements of the specification, then entry into that mode of operation is permissible. The provision of this specification should not, however, be interpreted as endorsing the failure to exercise good practice in restoring systems or components to OPERABLE status before plant startup.

When a shutdown is required to comply with ACTION requirements, the provisions of Specification 3.0.4 do not apply because they would delay placing the facility in a lower mode of operation. For the purpose of compliance with this specification the term shutdown is defined as a required reduction in mode.

3.0.5 This specification delineates what additional conditions must be satisfied to permit operation to continue, consistent with the ACTION statements for power sources, when a normal or emergency power source is not OPERABLE. It specifically prohibits operation when one division is inoperable because its normal or emergency power source is inoperable and a system, subsystem, train, component or device in another division is inoperable for another reason.

The provisions of this specification permit the ACTION statements associated with individual systems, subsystems, trains, components, or devices to be consistent with the ACTION statements of the associated electrical power source. It allows operation to be governed by the time limits of the ACTION statement associated with the Limiting Condition for Operation for the normal or emergency power source, not the individual ACTION statements for each system, subsystem, train, component or device that is determined to be inoperable solely because of the inoperability of its normal or emergency power source.

For example, Specification 3.8.1.1 requires in part that two emergency diesel generators be OPERABLE. The ACTION statement provides for an ~~72-hour~~ out-of-service time when one emergency diesel generator is not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components, and devices supplied by the inoperable emergency power source would also be inoperable. This would dictate invoking the applicable ACTION statements for each of the applicable Limiting Conditions for Operation. However, the provisions of Specification 3.0.5 permit the time limits for continued operation to be consistent with the ACTION statement for the inoperable