

Docket Number 50-346
License Number NPF-3
Serial Number 2374
Enclosure
Page 1

APPLICATION FOR AMENDMENT
TO
FACILITY OPERATING LICENSE NUMBER NPF-3
DAVIS-BESSE NUCLEAR POWER STATION
UNIT NUMBER 1

Attached is the requested license amendment to the Davis-Besse Nuclear Power Station, Unit Number 1, Facility Operating License Number NPF-3. Also included is the Safety Assessment and Significant Hazards Consideration and the Environmental Assessment.

The proposed license amendment (submitted under cover letter Serial Number 2374) concerns:

Shutdown operations of the Davis-Besse Nuclear Power Station during the ongoing Tenth Refueling Outage.

For: John P. Stetz, Vice-President - Nuclear

By: _____


J. H. Lash, Director - Engineering & Services

Sworn to and subscribed before me this 18th day of April, 1996.


Notary Public, State of Ohio

LORI J. STRAUSS
Notary Public, State of Ohio
My Commission Expires 3/22/96

9604290282 960418
PDR ADOCK 05000346
P PDR

Docket Number 50-346
License Number NPF-3
Serial Number 2374
Attachment 1

SAFETY ASSESSMENT AND SIGNIFICANT

HAZARDS CONSIDERATION

FOR

LICENSE AMENDMENT REQUEST NO. 96-0005

(6 pages follow)

SAFETY ASSESSMENT AND SIGNIFICANT HAZARDS CONSIDERATION

FOR

LICENSE AMENDMENT REQUEST NO. 96-0005

TITLE:

Use Of The Station Blackout Diesel Generator In Lieu Of Emergency Diesel Generator No. 1 During The Tenth Refueling Outage Full Core Offload Conditions.

Description:

The Davis-Besse Nuclear Power Station (DBNPS) is currently in a shutdown refueling condition (Mode 6) for the Tenth Refueling Outage (10RFO). Prior to relying on Emergency Diesel Generator (EDG) No. 1 to support operable Decay Heat Removal (DHR) equipment during the current refueling outage, previously identified EDG start time trends were investigated. As a result of this investigation, a load imbalance in the generator poles was discovered. Therefore, the generator was shipped offsite to be reworked. This resulted in one EDG (EDG No. 2) remaining operable along with the Station Blackout Diesel Generator (SBODG).

As originally scheduled, major work was planned to be performed on the DHR train No. 2 associated with EDG No. 2. DBNPS performs major maintenance on one DHR train each outage.

When fuel is being offloaded, one DHR train associated with the operable EDG No. 2 will be aligned to the reactor vessel in accordance with Technical Specifications, and one DHR train will be aligned to the spent fuel pool (SFP). After the core is entirely offloaded to the SFP, DHR train No. 2 associated with the operable EDG No. 2 will be taken out of service. The DHR train No. 1 normally associated with EDG No. 1 will need to be supplied by a reliable source of standby emergency AC power, since the normal Class 1E AC power source will be unavailable.

Work to be performed during the DHR train No. 2 outage includes work on valves to address pressure locking thermal binding concerns. The detailed outage planning performed prior to identifying the need to repair EDG No. 1 assumed that this component would be available. Rescheduling the outage work would significantly impact the preplanning done to minimize shutdown risk.

The outage schedule was based on the use of EDG No. 1 as the standby emergency AC power source for DHR train No. 1. Waiting until EDG No. 1 is repaired, reinstalled and tested will cause a delay in the schedule and, hence, a delay in the resumption of power operation by approximately six days, unless an alternate means of supplying a reliable backup source of AC power is provided.

Toledo Edison is proposing that during 10RFO, an alternate electrical lineup be utilized. The SBODG will be the standby emergency power source available to supply loads normally supplied by EDG No. 1, if required. In this configuration, the SBODG will be available to feed the essential 4.16 kV bus C1, via non-essential 4.16 kV bus D2. During the time this alternate lineup is in place, the core will be fully offloaded into the Spent Fuel Pool (SFP). The DBNPS Updated Safety Analysis Report (USAR) Section 9.1.3 describes the DHR System as the "seismic backup" for SFP cooling. As the use of non-seismic Class I switchgear and the SBODG may not meet the literal USAR description, this license amendment request is being proposed for NRC review in accordance with the requirements of 10 CFR 50.59(c) and 50.90.

Systems, Components and Activities Affected:

Decay Heat Removal System
Emergency Diesel Generator/Essential AC Distribution System
Spent Fuel Pool Cooling System
Station Blackout Diesel Generator

Function of the Affected Systems, Components and Activities

The DHR System functions to remove reactor vessel core decay heat during applicable plant shutdown modes, performs emergency core cooling injection and recirculation, provides reactivity control via boron concentration control, provides low temperature over-pressure protection, stores borated water, and provides safety grade cooling and makeup to the SFP. It also performs a variety of non-essential process related functions such as filling, draining, and recirculating various plant components and systems. The system also has a containment isolation function.

The EDG functions to supply essential AC power during a loss of supply from offsite AC sources. The essential AC system functions to distribute electrical power from the EDG and offsite sources to important plant systems and components as required for normal operation, accident mitigation, and to maintain the plant in a safe shutdown condition.

The SFP Cooling System is a non-safety related system which functions to remove the decay heat from fuel stored in the SFP and also maintains the quality and clarity of SFP water, fuel transfer canal water and contents of the borated water storage tank.

The SBODG functions to provide an alternate source of onsite AC power, if required. The SBODG can be manually started and loaded from the Control Room; automatic starting and loading is not provided.

Effects on Safety:

The normal means of maintaining SFP temperature is via the non-safety related SFP cooling system, which is cooled by the Component Cooling Water (CCW) System. During the time period of the proposed amendment, the SFP cooling system has the capability to remove the entire heat load from the full core offload and previously stored spent fuel (~ 23Mbtu/hour). The SFP can be maintained below 125°F provided CCW temperature is \leq 65°F. The current CCW temperature is being maintained below 65°F.

As described in the USAR Section 9.1.3, the DHR System serves as the Seismic Class I backup to the SFP cooling system, if needed.

During 10RFO core offload conditions, it is planned to remove DHR train No. 2 from service and use DHR train No. 1 to provide backup cooling to the SFP. Since EDG No. 1 is not available, there is no Class 1E emergency AC power to DHR train No. 1 components. The SBODG, however, can be used to supply AC power if required, to DHR train No. 1 through non-essential electrical bus D2 to bus C1. A single-line diagram of the 4160 Volt Auxiliary System is attached.

The SBODG is seismic Class II and was installed to meet the requirements of 10CFR50.63, "Loss of All Alternating Current Power," and is maintained under appropriate testing and surveillance requirements to ensure operability as required by the NRC's safety evaluation of the DBNPS Station Blackout Rule dated March 7, 1991 (Toledo Edison Log 3421). The SBODG electrical load capacity is greater than the EDG No. 1 capacity, ensuring that an adequate on-site electrical supply will be maintained. If needed, the SBODG can be manually started and loaded from the Control Room, including associated breaker alignments.

Non-essential bus D2 is seismic Class II. It has, however, been structurally upgraded such that it meets the criteria of the DBNPS site program to address NRC Unresolved Safety Issue A-46 (the Seismic Qualification Utility Group (SQUG) program). The SQUG program utilizes industrial experience from actual earthquakes to provide a more realistic assessment of the survivability of plant equipment. While equipment which falls within SQUG guidelines are not considered to be seismic Class I qualified, a basis exists to conclude that bus D2 has sufficient seismic margin for the DBNPS site.

Maximum possible loads, including outage related activities, have been reviewed and are well within the capacity of the SBODG.

In addition, EDG No. 2 is capable of providing electrical power to bus C1 via bus D2, using currently approved plant procedures, if necessary. Total electrical loads on EDG No. 2, if it were used to supply bus C1 in addition to loads on bus D1, have been reviewed and would be well within the capacity of EDG No. 2.

Given the above, use of the non-seismic SBODG as an alternate source of onsite standby emergency A. C. power is considered to represent an acceptably low risk during the short duration under consideration. The SBODG will serve as a temporary direct substitute for EDG No. 1, if required.

It should also be noted that the SBODG is not housed in a tornado protected structure. In the event of a postulated tornado which resulted in loss of all offsite power sources and the SBODG (or its capability to feed bus D2), adequate time is available to restore power to bus C1. Possible options include backfeeding EDG No. 2 to bus C1, or clearing faults on the non-essential portions of the 4.16kV distribution system. The probability of this combination of events occurring during the short duration of the DHR train 2 outage is considered to be sufficiently small.

Based on the approximately 23 million BTU/Hr heat load in the Spent Fuel Pool during the defueled condition, and a 300,000 gallon SFP volume, the temperature of the SFP will increase at a rate of approximately 9.5°F/Hr if a complete loss of SFP cooling occurs. The SFP is expected to be maintained below 125°F. It will take approximately 8 hours before the SFP temperature reaches 200°F should a complete loss of SFP cooling occur. Therefore, it is concluded that ample time is available to restore cooling to the spent fuel pool if necessary.

During the DHR train No. 2 outage the following compensatory actions will be taken to improve the reliability of the AC power sources and prevent loss of SFP water inventory:

- 1.) A minimum of two offsite power sources will be maintained available.
- 2.) No work will be performed in the switchyard.
- 3.) No work will be performed on the SBODG or EDG No. 2.
- 4.) Operators will be briefed on contingency plans for supplying fuel oil to the SBODG.
- 5.) A shutdown risk contingency plan will be developed in accordance with plant procedures including developing a plan to add water to the SFP without relying on a DHR pump.
- 6.) The SFP gate will be installed following the offload.
- 7.) The fuel transfer tube isolation valves will be closed and the transfer canal and cask pit will be filled so that a loss of SFP water does not occur due to gate seal failure.

Based on the above, it is concluded that there is no adverse effect on plant safety.

SIGNIFICANT HAZARDS CONSIDERATION:

The Nuclear Regulatory Commission has provided standards in 10CFR50.92(c) for determining whether a significant hazard exists due to a proposed amendment to an Operating License for a facility. A proposed amendment involves no significant hazards consideration if operation of the facility in accordance with the proposed changes would: (1) Not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) Not create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) Not involve a significant reduction in a margin of safety. Toledo Edison has reviewed the proposed change and determined that a significant hazards consideration does not exist because operation of the Davis-Besse Nuclear Power Station, Unit No. 1, in accordance with these changes would:

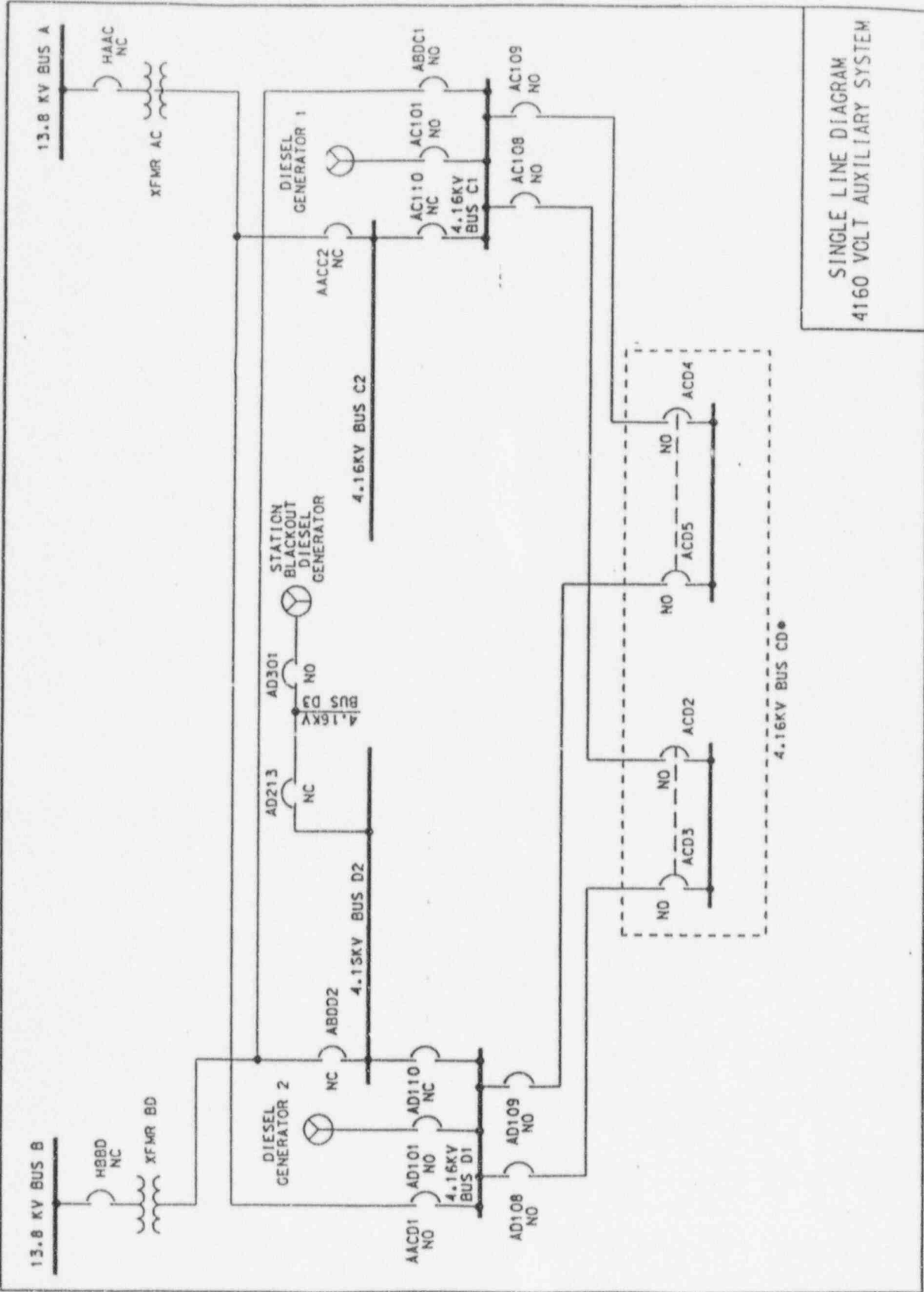
- 1a. Not involve a significant increase in the probability of an accident previously evaluated because no accident initiators are affected.
- 1b. Not involve a significant increase in the consequences of an accident previously evaluated because a reliable source of backup power will be maintained which can readily be aligned to provide power to plant components required to mitigate any postulated accidents.
2. Not create the possibility of a new or different kind of accident from any accident previously evaluated because no new accident initiators or adverse operating conditions will be created by the proposed action.
3. Not involve a significant reduction in a margin of safety because an adequate standby emergency AC power backup source is provided and sufficient time would be available to align and operate this source.

CONCLUSION:

On the basis of the above, Toledo Edison has determined that the License Amendment Request does not involve a significant hazards consideration.

REFERENCES:

1. DBNPS Updated Safety Analysis Report Section 9.1.3, "Spent Fuel Pool Cooling and Cleanup System," through Revision 19.
2. Toledo Edison letter to NRC dated August 29, 1995 (TE Serial No. 2316), "Summary Report for Resolution of Unresolved Safety Issue A-46."
3. DBNPS Calculation No. C-NSA-70.01-002, Revision 0, "Spent Fuel Pool Cooling Capability."



SINGLE LINE DIAGRAM
4160 VCLT AUXILIARY SYSTEM

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action

This proposed action involves the shutdown operation of the Davis-Besse Nuclear Power Station (DBNPS), Unit Number 1, during the ongoing Tenth Refueling Outage. A license amendment application is proposed in accordance with 10CFR50.59(c) and 50.90 to allow the use of the Station Blackout Diesel Generator (SBODG) as the standby emergency AC electrical power source for the Decay Heat Removal (DHR) System Train No. 1 in lieu of Emergency Diesel Generator (EDG) No. 1. This configuration would apply only during the Tenth Refueling Outage's full core offload period. The DHR Train No. 1 is the backup cooling train to the redundant Spent Fuel Pool Cooling System. The normal emergency AC power source (EDG No. 1) for DHR Train No. 1 is out of service due to required repairs to its generator.

The SBODG meets the definition of an alternate AC source under the requirements of 10CFR50.2 (Alternate AC Source) and 50.63 (Loss of All Alternating Current Power). The SBODG is described in the DBNPS Updated Safety Analysis Report (USAR) Section 8.3.1.1.4.2, Alternate AC Source - Station Blackout Diesel Generator. The NRC staff has previously evaluated the SBODG for compliance with 10CFR50.63 and found it acceptable.

During the time period of full core offload and use of the SBODG as the standby emergency AC electrical power, the Spent Fuel Pool Cooling System will be available, as will be at least two lines of offsite power.

Need for the Proposed Action

The proposed action is needed to allow a full core offload during the current plant shutdown to support the scheduled resumption of plant power operation.

Environmental Impact of the Proposed Action

The proposed action involves a change with respect to the use of facility components located within the restricted area as defined in 10CFR Part 20. As discussed in the Significant Hazards Consideration, this proposed license amendment does not involve a significant hazards consideration. The proposed change does not alter source terms, containment isolation or allowable releases. In addition, the proposed change does not involve an increase in the amounts, and no change in the types, of any radiological effluents that may be allowed to be released offsite. Furthermore, there is no increase in the individual or cumulative occupational radiation exposure.

With regard to potential non-radiological impacts, the proposed license amendment involves no increase in the amounts or change in types of any non-radiological effluents that may be released offsite, and has no other environmental impact.

Based on the above, Toledo Edison concludes that there are no significant radiological or non-radiological environmental impacts associated with the proposed license amendment.

Alternatives to the Proposed Action

Since Toledo Edison has concluded that the environmental effects of the proposed action are not significant, any alternatives will have only similar or greater environmental impacts. The principal alternative would be not to grant the license amendment. This would not reduce the environmental impacts attributable to the facility. Furthermore, it would delay the scheduled resumption of power operation.

Alternative Use of Resources

This action does not involve the use of environmental resources not previously considered in the Final Environmental Statement Related to the Operation of the Davis-Besse Nuclear Power Station, Unit Number 1 (NUREG 75/097).

Finding of No Significant Impact

Toledo Edison has reviewed the proposed license amendment against the criteria of 10CFR51.30 for an environmental assessment. As demonstrated above, the proposed license amendment does not involve a significant hazards consideration, does not increase the types or amounts of effluents that may be released offsite, and does not increase individual or cumulative occupational radiation exposures. Accordingly, Toledo Edison finds that the proposed license amendment, if approved by the Nuclear Regulatory Commission, will have no significant impact on the environment and that no Environmental Impact Statement is required.