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October 24, 2000

William A. Eaton  
Vice President,  
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Grand Gulf Nuclear Station

U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Grand Gulf Nuclear Station  
Docket No. 50-416  
License No. NPF-29  
Diesel Engine Lubricating System  
Technical Specification Change Request

GNRO: 2000/00060

Gentlemen:

The requested change to the Technical Specifications for the Diesel Engine Lube Oil System inventory requirements is required to ensure adequate oil supplies to compensate for any future changes in oil consumption rates. The required changes to the Division I, II, and III DG lube oil storage requirements provide additional margin to ensure engine operability during Design Basis Accidents.

Due to the limited size of the engine oil sumps for the Division III DG a physical change to the facility is required to accommodate the proposed increase in inventory for these engines. The Division I and II engine sumps are sized such that it is only necessary to re-define the useable volume in the attached sump and specify new operating limits for Operations to use when checking engine oil level via the dipstick.

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.

Entergy Operations requests that the effective date for this TS change to be within 90 days of approval. 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 October 24, 2000.

Very truly yours,

A handwritten signature in cursive script that reads "William A. Eaton".

Attachments  
cc: (See Next Page)

cc:

Dixon-Herrity	J. L.	GGNS Senior Resident)	(w/a)
Levanway	D. E.	(Wise Carter)	(w/a)
Reynolds	N. S.		(w/a)
Smith	L. J.	(Wise Carter)	(w/a)
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Mr. E. W. Merschoff (w/2)  
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**ATTN: ADDRESSEE ONLY**

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PROPOSED TECHNICAL SPECIFICATION

AND

RESPECTIVE SAFETY ANALYSES

IN THE MATTTTER OF AMENDING

LICENSE NO. NPF-29

ENTERGY OPERATIONS, INC.

GRAND GULF NUCLEAR STATION

DOCKET NO. 50-416

## **DESCRIPTION OF PROPOSED CHANGES**

Entergy Operations, Inc. is requesting this revision to the Grand Gulf Technical Specifications, which govern the lube oil inventories for the Division I, II, and III Diesel Generators. Technical Specification LCO 3.8.3 Action B currently requires that the lube oil inventory for Division I and II DG be <205 gallons and  $\geq 176$  gallons and for Division III DG be <101 gallons and  $\geq 87$  gallons. The proposed change increases Division I and II DG inventories to <410 gallons and  $\geq 350$  gallons and for Division III DG inventory to <202 gallons and  $\geq 173$  gallons. The change will affect both the ACTIONS and the SURVEILLANCES governing this inventory.

The methods for affecting this change are different for the two different type engines at Grand Gulf Nuclear Station. To accommodate the increased inventory for the Division I and II DG it is only necessary to redefine the useable volume in the attached sump and specify new operating limits for Operations to use when checking engine oil level via the dipstick. On the Division III DG the attached sump is not large enough to accommodate the increased inventory. Therefore it is necessary to add a dedicated storage skid to the DG Room.

## **BACKGROUND**

When implementation of Improved Technical Specifications first introduced the requirement for maintaining lube oil inventories Design Engineering performed calculations using vendor supplied consumption rates of 1.21 gallons per hour (Div. I and II) and 0.6 gallons (Div. III) per hour as input data. The values currently in Technical Specifications 3.8.3 have remained unchanged from this original determination. Subsequent to this a Condition Report has been generated identifying that the oil consumption rate may exceed the vendor specified nominal consumption rate. On August 8, 1998 the apparent consumption rate was determined to be 0.94 gallons per hour for Division III DG. Engineering at this time specified a new inventory requirement for the engines, which has been implemented via Administrative Controls, until final resolution of this concern could be reached.

The Final Safety Analysis Report Section 9.5.7 provides a description and defines the licensing basis for the Diesel Engine Lubricating System. The consumption rate for which the inventory is specified is stated in the Technical Specification Bases. The stated objective is to ensure that there is sufficient lube oil to support seven days of operation at rated load conditions. The Licensing Basis does recognize that make-up oil may be required at some point during the design basis event.

## **BASIS FOR PROPOSED CHANGE**

Design Engineering has confirmed through calculations that, with the Division III D/G apparent consumption rate of 0.94 gallons per hour, its sump capacities are sufficient to meet design requirements. To ensure that sufficient margin exists for any potential increases in consumption rate Design Engineering has calculated the necessary inventory based on a doubling of the vendor-specified rate for these engines. So as to provide margin and consistency this methodology has also been applied to the calculations for the Division I and II engines.

There is no physical modification required to support the new calculated inventory for the Division I and II engines. The capacity listed in the UFSAR Table 9.5-6 is 1200 gallons for these engines. Design Engineering has, after consultation with the engine vendor, determined that redefinition of the useable sump volume and a slight increase in the required sump level is an appropriate resolution for these engines.

For the Division III engines (two engines and one generator) the sump capacity is too small to accommodate the same solution. The solution for Division III will require that a dedicated storage skid capable of holding three 55 gallon barrels of oil be installed in the DG Room. Design Engineering also specified the necessary material for manually adding oil to the engine be located in the Room. This skid was designed to not create a seismic II/I hazard. Engineering also updated the Fire Hazard Analysis to ensure that existing design requirements were still valid and that the ability to achieve and maintain safe shutdown was not adversely affected.

#### **DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION**

Entergy Operations, Inc. is proposing that the Grand Gulf Nuclear Station Operating License be amended to revise the Grand Gulf Technical Specifications, which govern the lube oil inventories for the Division I, II, and III Diesel Generators. Technical Specification LCO 3.8.3 Action B currently requires that the lube oil inventory for Division I and II DG be <205 gallons and  $\geq 176$  gallons and for Division III DG be <101 gallons and  $\geq 87$  gallons. The proposed change increases Division I and II DG inventories to <410 gallons and  $\geq 350$  gallons and for Division III DG inventory to <202 gallons and  $\geq 173$  gallons. The change will affect both the ACTIONS and the SURVEILLANCES governing this inventory.

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?**

The purpose of the emergency diesel generators is to mitigate the consequences of analyzed accidents. Emergency Diesel Engine inoperability or loss of capability has no effect on the probability of any analyzed accident. The reason for this change is to provide added assurance that the engines perform per the design requirements and therefore the consequences of an accident previously evaluated are not increased.

The purpose of the requested change is to regain margin in the lube oil consumption calculations, such that, if increases in consumption should occur in the future Technical Specifications requirements will still ensure operability of the Diesel Generators. Design Engineering has basically taken the vendor's

specified consumption rate and doubled that value to ensure that the newly calculated inventory limit will bound any potential consumption rate increases.

Current calculations using as found consumption rates have shown that the limiting sump volume is on Division III engines and that there is minimal margin left between the actual volume and the calculated volume needed. Therefore, there is a need for an external dedicated storage skid, which is the only physical change to the plant necessary to support this change request. The current licensing basis recognizes that make-up oil may be required at some point during a design basis event. The current Bases for Technical Specification 3.8.3 LCO provides this recognition.

Given the stated purpose and no need for changes to installed plant structures, (other than addition of a new Div. III lube oil storage skid) systems, or components there will be no significant changes to the operation of the facility. 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 purpose of the emergency diesel generators is to mitigate the consequences of analyzed accidents, the engines are not accident initiating. Emergency Diesel Engine inoperability or loss of capability cannot create the possibility of a new or different kind of accident from any accident previously evaluated. The reason for this change is to provide added assurance that the engines perform per the design requirements.

The Diesel Engine Lubricating System (DELS) design and operation is unaffected by this change. Recognizing the need for having a make-up inventory and staging a volume readily accessible to the operator will enhance the operator's ability to maintain DG operable. Design Engineering has performed appropriate fire hazards reviews and seismic III/I reviews to assure compliance with current design requirements.

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 current licensing basis requires that the DELS provide seven days of Diesel Generator operation under specified load conditions. This basis was substantiated via calculation using vendor supplied consumption rates of 1.21 (Div. I and II) and 0.6 (Div. III) gallons per hour. The current basis recognizes that make-up oil may be required at some point during a design basis event. To ensure this basis is valid for future operations Design Engineering has recalculated the required inventories based on a more conservative consumption rate. This change will ensure that sufficient lube oil is readily available to support

the extended run times under post accident conditions. Therefore, this change does not involve a significant reduction in the margin of safety.

Therefore, based on the reasoning presented above and the previous discussion of the amendment request, 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:

1. The proposed license amendment does not involve a significant hazards consideration as described previously in the evaluation.
2. 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.
3. The proposed license amendment does not result in a significant increase to the individual or cumulative occupational radiation exposure because this change is located in the Diesel Generator Room, which is a low dose area of the plant. This room is normally occupied when the diesel engines are running.

Attachment 3 to:  
GNRO 2000/00060

**MARKUP OF CURRENT TECHNICAL SPECIFICATIONS**

Diesel Fuel Oil, Lube Oil, and Starting Air  
3.8.3

ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required diesel generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each DG.  
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CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more DGs with fuel oil level:</p> <p>1. For DG 11 or 12, &lt; 62,000 gal and <math>\geq</math> 54,000 gal; and</p> <p>2. For DG 13, &lt; 41,200 gal and <math>\geq</math> 35,100 gal.</p>	<p>A.1 Restore fuel oil level to within limits.</p>	48 hours
<p>B. One or more DGs with lube oil inventory:</p> <p>1. For DG 11 or 12, <del>&lt; 205</del> gal and <math>\geq</math> <del>176</del> gal; and</p> <p>2. For DG 13, &lt; <del>101</del> gal and <math>\geq</math> <del>87</del> gal.</p>	<p>B.1 Restore lube oil inventory to within limits.</p>	48 hours

(continued)

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.8.3.1 Verify each fuel oil storage tank contains:</p> <p>a. <math>\geq</math> 62,000 gal of fuel for DGs 11 and 12; and</p> <p>b. <math>\geq</math> 41,200 gal of fuel for DG 13.</p>	31 days
<p>SR 3.8.3.2 Verify lube oil inventory is:</p> <p>a. <math>\geq</math> <del>205</del><sup>410</sup> gal for DGs 11 and 12; and</p> <p>b. <math>\geq</math> <del>101</del><sup>202</sup> gal for DG 13.</p>	31 days
<p>SR 3.8.3.3 Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.</p>	In accordance with the Diesel Fuel Oil Testing Program
<p>SR 3.8.3.4 Verify each required DG air start receiver pressure is:</p> <p>a. <math>\geq</math> 160 psig for DGs 11 and 12; and</p> <p>b. <math>\geq</math> 175 psig for DG 13.</p>	31 days
<p>SR 3.8.3.5 Check for and remove accumulated water from each fuel oil storage tank.</p>	92 days

(continued)

Attachment 4 to:  
GNRO 2000/00060

**MARKUP OF TECHNICAL SPECIFICATION BASES**

**FOR INFORMATION ONLY**

## B 3.8 ELECTRICAL POWER SYSTEMS

### B 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

#### BASES

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##### BACKGROUND

Each diesel generator (DG) is provided with a storage tank having a fuel oil capacity sufficient to operate that DG for a period of 7 days while the DG is supplying maximum post loss of coolant accident load demand (Ref. 1). The maximum load demand is calculated using the assumption that at least two DGs are available. This onsite fuel oil capacity is sufficient to operate the DGs for longer than the time to replenish the onsite supply from outside sources.

Fuel oil is transferred from each storage tank to its respective day tank by a transfer pump associated with each storage tank. Redundancy of pumps and piping precludes the failure of one pump, or the rupture of any pipe, valve, or tank to result in the loss of more than one DG. All outside tanks, pumps, and piping are located underground. The fuel oil level in the storage tank is indicated in the control room.

For proper operation of the standby DGs, it is necessary to ensure the proper quality of the fuel oil. Regulatory Guide 1.137 (Ref. 2) addresses the recommended fuel oil practices as supplemented by ANSI N195 (Ref. 3). The fuel oil properties governed by these SRs are the water and sediment content, the kinematic viscosity, specific gravity (or API gravity), and impurity level.

The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. ~~Each engine oil sump contains an inventory capable of supporting a minimum of 7 days of operation.~~ This supply is sufficient to allow the operator to replenish lube oil from outside sources.

INSERT  
A

Each DG has an air start system with adequate capacity for five successive start attempts on the DG without recharging the air start receiver(s).

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(continued)

## INSERT A

Each engine oil sump contains an inventory capable of supporting a minimum of 7 days of operation under design basis load and vendor specified consumption rates. To ensure sufficient margin to compensate for possible higher consumption rates than that specified by the vendor additional reserve volume is required for the Division III engines. This additional volume is maintained in a lube oil storage skid located in the DG Room.