



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 169 TO FACILITY OPERATING LICENSE NO. DPR-31
AND AMENDMENT NO. 163 TO FACILITY OPERATING LICENSE NO. DPR-41

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT UNIT NOS. 3 AND 4

DOCKET NOS. 50-250 AND 50-251

1.0 INTRODUCTION

By letter dated July 19, 1994, Florida Power and Light Company (FPL or the licensee) requested a revision to the Turkey Point Units 3 and 4 Technical Specifications (TS) to relocate the program requirements for Emergency Diesel Generator (EDG) fuel oil testing to the Bases section of TS. FPL also proposed the addition of ACTION statements to address the required action in the event the diesel fuel oil does not meet the program limits. Based on discussions with the staff, the request was modified and resubmitted by letter dated October 20, 1994, primarily to add the testing program to Section 6, Administrative Controls, of the TS.

The clarification to action statement 3.8.1.1.g requested by the licensee and discussed below did not affect the intent of the specifications. Therefore, the change is within the scope of the action described in the Federal Register (59 FR 55870) on November 9, 1994.

2.0 DESCRIPTION AND EVALUATION

The EDGs are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that fuel, Reactor Coolant System and containment design limits are not exceeded.

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

Since diesel fuel oil subsystem supports the operation of the standby AC power sources, it satisfies Criterion 3 of the NRC "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (58 FR 39132) for inclusion in TS.

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2.1 Addition of TS Action Statements

2.1.1 New Fuel Oil Properties

FPL proposed the addition of ACTION statement g. of TS 3.8.1.1 to address the required action in the event the new fuel oil properties do not meet the Diesel Fuel Oil (DFO) Testing Program limits following addition of the new fuel oil to the fuel oil storage tanks. The staff found it necessary to clarify the action statement by noting that the properties of API Gravity, specific gravity or an absolute specific gravity; kinematic viscosity; clear and bright appearance; and flash point shall be confirmed to be within limits prior to addition to the storage tanks. This clarification was discussed with the licensee by telephone on December 5, 1994, and the licensee requested that the clarification be added as a footnote to TS 3.8.1.1.

In the event the new fuel oil properties other than those specified previously are not met, ACTION statement g. of TS 3.8.1.1 provides an additional 30 days to meet the DFO Testing Program limits. This additional 30-day period is acceptable because the fuel oil properties of interest, even if they are not within limits, would not have an immediate effect on EDG operation. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains acceptable, or to restore the stored fuel oil properties. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a DG start and load were required during this time interval and the fuel oil properties were outside limits for these properties, there is a very high likelihood that the DG would still be capable of performing its intended function since the DFO properties of concern do not impact DFO combustion and will only have an impact on EDG reliability over many thousands of hours of operation. The proposed change is therefore acceptable.

We find this change acceptable since there is a very high likelihood that the DG would be capable of performing its intended function during the proposed time interval under the conditions specified. In addition, the staff notes that the proposed change is consistent with the improved standard TS.

2.1.2 Stored Fuel Oil

FPL also proposed the addition of ACTION statement h. to TS 3.8.1.1, to address the required action in the event the stored fuel oil total particulates do not meet the DFO Testing Program limits. Fuel oil degradation during long-term storage shows up as an increase in particulate, due mostly to oxidation. This action statement requires the restoration of the fuel oil total particulates to program limits (10 mg/l) within seven days.

Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. Poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend. Since the presence of particulates does not mean failure of the fuel oil to burn properly in the diesel engine, and particulate concentration is unlikely



to change significantly between surveillance frequency intervals, it is prudent to allow a brief period prior to declaring the associated DG inoperable. The particulate can cause fouling of filters and fuel oil injection equipment, however, which can cause engine failure. The trigger value of 10mg/liter of particulate is very conservative with respect to what an EDG can actually tolerate without adversely affecting filters and attendant EDG operation. Also, the possibility that particulate contamination will increase from 10 mg/liter to some unacceptable value in seven days is not credible. The 7-day Completion Time allows for further evaluation, resampling and re-analysis of the DG fuel oil.

We find this change acceptable since there is a very high likelihood that the DG would be capable of performing its intended function during the proposed time interval under the conditions specified. In addition, the staff notes that the proposed change is consistent with the improved standard TS.

2.2 Surveillance Requirements

FPL proposed relocating the previous surveillance requirements contained in TS 4.8.1.1.2.e and f to Section 6, Administrative Requirements, and the TS BASES. The proposed new surveillance requirements for 4.8.1.1.2.e and f would state that the new fuel oil and stored fuel oil are tested and maintained within the limits of the DFO Testing Program.

This is acceptable since it simply refers to another location of TS which will specify the surveillance frequencies. The surveillance frequencies and limits are evaluated in the following section.

2.3 Relocation of EDG Fuel Oil Testing Description to TS Section 6

The licensee proposed including a general description of the DFO Testing Program in Section 6 including the surveillance frequencies. For new fuel oil only, the tests listed below are a means of determining whether new fuel oil is of the appropriate grade and has not been contaminated with substances that would have an immediate, detrimental impact on diesel engine combustion. If results from these tests are within acceptable limits, the fuel oil may be added to the storage tanks without concern for contaminating the entire volume of fuel oil in the storage tanks. These tests are to be conducted prior to adding the new fuel to the storage tank(s), but in no case is the time between receipt of new fuel and conducting the tests to exceed 30 days. The tests are as follows:

1. an API Gravity or an absolute specific gravity within limits,
2. a flash point and kinematic viscosity within limits for Grade No. 2-D fuel oil per ASTM D975, and
3. a clear and bright appearance with proper color.

Failure to meet any of the above limits is cause for rejecting the new fuel oil, but does not represent a failure to meet the LCO 3.8.1.1 since the fuel oil is not added to the storage tanks.



The proposed TS also requires that, following the above satisfactory testing of the new fuel oil, the other properties for Grade No. 2-D fuel oil per ASTM D975 are determined to be within limits within 30 days following sampling and addition to storage tanks. The 30-day period is acceptable because the fuel oil properties of interest, even if they were not within stated limits, would not have an immediate effect on EDG operation (see section 2.1.1). This surveillance ensures the availability of high quality fuel oil for the EDGs.

Regarding stored fuel oil, the licensee proposed that the total particulate concentration of the fuel oil be verified to be ≤ 10 mg/liter when tested every 31 days in accordance with either ASTM D-2276 or ASTM D-5452. As previously discussed, the presence of particulate does not mean the fuel oil will not burn properly in a diesel engine. The particulate can cause fouling of filters and fuel oil injection equipment, however, which can cause engine failure.

It is acceptable to obtain a field sample for subsequent laboratory testing in lieu of field testing. The frequency of this test takes into consideration fuel oil degradation trends that indicate that particulate concentration is unlikely to change significantly between tests.

Inclusion of both ASTM D-2276 and D-5452 makes the proposed amendment consistent with the latest ASTM approach to particulate testing. D-2276(93) covers testing in the field (method A2 of D-2276(89)). D-5452 covers testing in the lab and is essentially identical to method A3 of D-2276(89). Both are acceptable. Inclusion of both standards gives the licensee acceptable latitude with respect to conducting the test. This is also acceptable.

We find this change acceptable since the testing intervals have not changed and there is a high likelihood that the DG would be capable of performing its intended function with the proposed DFO testing specified. In addition, the staff notes that the proposed relocation to the Administrative Controls section of TS is consistent with the improved standard TS.

The licensee also proposed revising TS Section 6 to include the programmatic responsibilities of the Plant Nuclear Safety Committee and Company Nuclear Review Board to review the DFO Testing Program and implementing procedures, as well as the requirement that written procedures be established, implemented and maintained for implementation of the DFO Testing Program. This is consistent with other programs described in the TS, is more restrictive than the current TS, and is, therefore, acceptable.

2.4 Relocation of EDG Fuel Oil Testing Details to TS Bases

FPL proposed placing the specific details of the EDG fuel oil surveillance requirements from TS 4.8.1.1.2e and 4.8.1.1.2f to the TS Bases. The proposal included listing the surveillance requirements' periodicity, American Society for Testing and Materials (ASTM) testing standards, and acceptance criteria in both the Bases for the TS and the plant procedures used to test the EDG fuel oil. In effect, this relocates the current requirements from TS to the Bases.

The licensee stated that the proposed amendments will improve flexibility in



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accomplishing the surveillance requirements. This flexibility is required, for example, as a result of recent difficulties encountered in obtaining laboratory analyses as required by the TS, in that the specific testing standard has become outdated and generally fallen into disuse. While these difficulties can, and have been, overcome in the short term, the continued requirement to meet outdated standards is economically expensive and provides no safety benefit in the case of contemporary testing methods.

The staff's review of the proposed change determined that the relocation of the details of the DFO Testing Program does not eliminate the requirements for the licensee to ensure that the EDG system is capable of performing its safety function. Future changes to the DFO Testing Program not included in TS 6.8.4.e would be accomplished pursuant to 10 CFR §50.59, "Changes, tests, and experiments." Changes to the testing program involving aspects specified in the Administrative Controls section 6.8.4.e described previously would require a TS Amendment.

By deleting the specific reference to the testing standards being used to meet TS testing requirements, FPL could change an ASTM standard not listed in TS 6.8.4.e, or standard edition, without prior NRC approval, provided an unreviewed safety question did not exist. As stated in the proposed TS 6.8.4.e, the source of the sampling and testing requirements, and acceptance criteria will continue to be the ASTM standards. NRC inspection and enforcement programs also enable the staff to monitor facility changes and licensee adherence to commitments and to take any remedial actions that may be appropriate. The staff's review concluded that 10 CFR 50.36 does not require the specifics of the DFO Testing Program, relocated to the BASES section, to be retained in TS. Requirements related to the operability, applicability, and surveillance requirements are retained due to the EDG (and fuel oil) importance in mitigating the consequences of an accident. However, the staff determined that the inclusion of the testing specifics described above are an operational detail related to the licensee's safety analyses which are adequately controlled by the requirements of 10 CFR 50.59. Therefore, the continued processing of license amendments related to revisions of the DFO program, where the revisions to those requirements do not involve an unresolved safety question, would afford no significant benefit with regard to protecting the public health and safety.

Therefore, we find this change acceptable since the details of the program do not need to be controlled by TS, sufficient regulatory controls exist with respect to the Bases of the TS and changes to the requirements are controlled by means acceptable to the staff (10 CFR 50.59). In addition, the staff notes that the proposed relocation is consistent with the improved standard TS.

3.0 CONCLUSION

We find the requested changes acceptable since sufficient regulatory controls exist with respect to the Bases of the TS, details of the program do not need to be controlled by TS, and there is a high likelihood that the DG would be capable of performing its intended function during the proposed time interval under the conditions specified. The requirements that are being relocated from TS will exist outside of TS and changes to the requirements are

controlled by means acceptable to the staff. The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of these amendments will not be inimical to the common defense and security or the health and safety of the public.

4.0 STATE CONSULTATION

Based upon the written notice of the proposed amendments, the Florida State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

These amendments relate to changes surveillance requirements in addition to recordkeeping, reporting, or administrative procedures or requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (59 FR 55870). Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

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Date: December 28, 1994