



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NOS. 196 AND 79 TO FACILITY OPERATING
LICENSE NOS. DPR-66 AND NPF-73
DUQUESNE LIGHT COMPANY
OHIO EDISON COMPANY
PENNSYLVANIA POWER COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
THE TOLEDO EDISON COMPANY
BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2
DOCKET NOS. 50-334 AND 50-412

1.0 INTRODUCTION

By letter dated July 20, 1995, as supplemented December 4, 1995, the Duquesne Light Company (the licensee) submitted a request for changes to the Beaver Valley Power Station, Unit Nos. 1 and 2 (BVPS-1 and BVPS-2), Technical Specifications (TSs). The requested changes would revise TS 3/4.8.1.1 to incorporate guidance provided in NRC Generic Letter (GL) 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," and GL 93-05, "Line-Item Technical Specification Improvements to Reduce Surveillance Requirements for Testing During Power Operation," which includes (1) revised requirements for testing the operable emergency diesel generators (EDGs) for various combinations of inoperable offsite circuits and EDGs and (2) revised surveillance requirements for the EDGs. The revised surveillance requirements include specifying generator voltage, frequency limits, and diesel starting time. In addition, several editorial changes would be made to TS 3/4.8.1.1 which would be consistent with the guidance provided in the NRC's Improved Standard Technical Specifications (NUREG-1431). The December 4, 1995, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination or expand the amendment request beyond the scope of the August 16, 1995, Federal Register notice.

2.0 EVALUATION

The proposed changes pertain to both the BVPS-1 and BVPS-2 TSs unless otherwise specified. The NRC staff's evaluation of the licensee's proposed changes to the TSs follows.

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TS 3.8.1.1

The licensee proposes to change the designation of the footnote from * to (1). Footnote (1) states that fuel oil properties not in accordance with TS 4.8.1.1.2.d.2 or TS 4.8.1.1.2.e shall be brought within the specified limits within 7 days. Footnote (1) applies to Action Statements 3.8.1.1.b, 3.8.1.1.c and 3.8.1.1.e. In addition, the licensee proposes to add a footnote (2) to indicate that the designated test is required to be completed regardless of when the inoperable diesel generator is restored to operability. Footnote (2) is added in order to verify that a common mode failure does not exist when one diesel generator has been declared inoperable. Footnote (2) applies to Action Statements 3.8.1.1.b and 3.8.1.1.c. This change is consistent with the Standard Technical Specifications (STS) or editorial in nature and is therefore, acceptable.

Action Statement 3.8.1.1.a

The subject action statement currently addresses either one inoperable offsite circuit or one inoperable EDG. The licensee proposes to revise this section to exclusively address one inoperable offsite circuit. In addition, TS 4.1.1.1.2.a.5, to verify the operability of the diesel generators, will no longer be performed for an inoperable offsite circuit. The licensee asserts that TS 4.1.1.1.2.a.5 is unnecessary because the circumstances which could lead to an inoperable offsite power source do not imply that the diesel generators will be unable to perform their safety function.

The NRC staff provided relaxation to EDG surveillance requirements by GL 93-05. In this letter, the NRC staff recommended deletion of the following requirement: "If either diesel generator has not been successfully tested within the past 24 hours demonstrate its OPERABILITY by performing Surveillance Requirements 4.8.1.1.2.a.5 and 4.8.1.1.2.a.6 for each such diesel generator, separately, within 24 hours." Based on the above information, the NRC staff finds that the subject TS change is consistent with the STS and the intent of GL 93-05 and is therefore, acceptable.

Action Statement 3.8.1.1.b

A new action statement is added as a result of the proposed change to Action Statement 3.8.1.1.a in order to address one inoperable EDG. In addition, the licensee proposes to perform TS 4.8.1.1.2.a.5 within 24 hours if the EDG became inoperable due to any cause other than an independently testable component, testing or preplanned preventative maintenance unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated by the licensee.

GL 93-05 recommends that the operability of the remaining EDGs be demonstrated when one EDG becomes inoperable. EDG operability has to be demonstrated only if the EDG became inoperable due to any cause other

than an independently testable component, testing or preplanned preventative maintenance. Based on the above information, the NRC staff finds that the subject TS change is consistent with the STS and the intent of GL 93-05 and is therefore, acceptable.

Action Statement 3.8.1.1.c

The subject action statement addresses the limiting conditions for operations (LCO) when one offsite circuit and one diesel generator become inoperable. Similar to the above change for Action Statement 3.8.1.1.b, the licensee proposes to demonstrate the operability of the remaining operable EDG by performing TS 4.8.1.1.2.a.5 within 8 hours if the EDG became inoperable due to any cause other than an independently testable component, testing or preplanned preventative maintenance unless the absence of any potential common failure for the remaining EDG is demonstrated by the licensee. In addition, the licensee proposes to add the following administrative text "Restore the other A. C. power source (offsite circuit or diesel generator) to OPERABLE status in accordance with the provisions of Action Statement a or b, as appropriate with the time of initial loss of the remaining inoperable A. C. power source. A successful test of diesel OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.5 performed under this Action Statement for an OPERABLE diesel or a restored to OPERABLE diesel satisfies the diesel generator test requirement of Action Statement b."

The addition of the above administrative text does not alter the original intent of the Action Statement and is therefore, acceptable. The testing of the remaining operable EDG every 8 hours is removed by this TS change. This change is consistent with the intent of GL 84-15 to reduce the number of cold fast start surveillance tests for diesel generators. For the reasons stated above for Action Statements 3.8.1.1.a and 3.8.1.1.b the NRC staff finds that the subject TS change is acceptable.

Action Statement 3.8.1.1.d

The subject action statement, formerly action statement 3.8.1.1.c, describes the LCO when two of the required offsite power circuits become inoperable. Currently, the licensee must restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or to be in at least HOT STANDBY within the next 4 hours. The revised action statement changes the time to reach the HOT STANDBY condition from 4 hours to 6 hours.

The NRC staff noted that the proposed action statement did not stipulate any time period that the unit must reach the COLD SHUTDOWN operating condition assuming that the two offsite power circuits are still inoperable. After a teleconference on October 12, 1995, the licensee submitted a revision letter dated December 4, 1995, to add "and in COLD SHUTDOWN within the following 30 hours" after the words "...at least HOT STANDBY within the next 6 hours." Similar to Action Statement 3.8.1.1.a, TS 4.1.1.1.2.a.5, to verify the operability of the diesel generators,

will no longer be performed for the LCO involving two inoperable offsite circuits. The licensee asserts that TS 4.1.1.1.2.a.5 is unnecessary because the circumstances which could lead to inoperable offsite power sources do not imply that the diesel generators will be unable to perform their safety function.

Based on the above information, the NRC staff finds that the subject TS change is consistent with the STS and GL 93-05, is therefore, acceptable.

Action Statement 3.8.1.1.e

The subject action statement, formerly action statement 3.8.1.1.d, addresses the LCO associated with two inoperable EDGs. Similar to the above change for Action Statement 3.8.1.1.b, the licensee proposes to change "restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in COLD SHUTDOWN within the next 36 hours. Restore at least two diesel generators to OPERABLE status within 72 hours from the time of initial loss or be in COLD SHUTDOWN within the next 36 hours" to "restore one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Following restoration of one diesel generator unit, follow Action Statement b with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable diesel generator. A successful test of diesel OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.5 performed under this Action Statement for a restored to OPERABLE diesel satisfies the diesel generator test requirement of Action Statement b."

Except for specifying that the unit should be in HOT STANDBY within a 6-hour period which is consistent with STS, the addition of the above administrative text does not alter the original intent of the Action Statement. Therefore, the NRC staff finds that the subject TS change is acceptable.

TS 4.8.1.1

The licensee proposes to replace "ambient conditions" with "standby conditions" throughout TS 4.8.1.1. This change is acceptable because it does not change the original intent that the diesel generator be tested in "as found" conditions which is equivalent to standby conditions. Regulatory Guide 1.9 permits the testing of a diesel generator in standby conditions if those conditions refer to the operation of prewarm systems designed to maintain lube oil and jacket water cooling at certain temperatures or prelubrication systems which would normally be in operation. Given that the TS change do not alter the original intent of the surveillance requirement the NRC staff finds that it is acceptable.

The licensee proposes to add a footnote (3) which states that "The values for voltage and frequency are analysis values and do not include measurement uncertainties." During the NRC staff teleconference with the licensee on October 12, 1995, the NRC staff indicated that the footnote may lead to a misinterpretation of the test results. By letter dated December 4, 1995, the licensee revised the proposed footnote as follows: "The values for voltage and frequency are analysis values. These value bands shall be appropriately reduced to account for measurement uncertainties." This footnote applies to TS 4.8.1.1.2.a.5, 4.8.1.1.2.b.3.b and 4.8.1.1.2.f (Unit 2 only). Given that the TS change does not change the original intent of the surveillance requirement, the NRC staff finds the TS change acceptable as revised.

The licensee proposes to add footnote (4) which states for Unit 1 that "All diesel generator starts may be followed by a warmup period prior to loading" and for Unit 2 that "All diesel generator starts may be preceded by an engine prelube period and followed by a warmup period prior to loading." The footnote is applicable to TS 4.8.1.1.2.a.5. The NRC staff finds that the TS change associated with the warmup period is consistent with GL 84-15 which recommends that diesel generator test starts be conducted in a manner which will minimize mechanical stress and wear on the engine. The use of a prelube period recommended by the manufacturer is consistent with the STS guidance for the applicable tests. Based on the above information, the NRC staff finds that the subject TS change is acceptable.

The licensee proposes to add a footnote (5) which states "Diesel generator loading may include gradual loading as recommended by the manufacturer." The footnote is applicable to TS 4.8.1.1.2.a.6. The NRC staff finds that the subject TS change is consistent with the guidance of GL 84-15 to minimize the wear and stress on the diesel engine during tests and, therefore, is acceptable.

The licensee proposes to add a footnote (6) for Unit 1 only which states "The frequency limits apply for the diesel generator at full accident loading. Extrapolation of test data at lower loads can be performed to meet criteria." During the NRC staff teleconference with the licensee on October 12, 1995, the NRC staff indicated that the footnote lacked sufficient clarity regarding the method to be used in the extrapolation of test data. By letter dated December 4, 1995, the licensee revised the proposed footnote as follows: "The frequency limits apply for the diesel generator at full loading. An engineering evaluation of the test data at lower loads can be performed to demonstrate operability." This footnote applies to TS 4.8.1.1.2.b.3.b and 4.8.1.1.2.f. Given that the TS change does not change the original intent of the surveillance requirement, the NRC staff finds the TS change acceptable as revised.

The licensee proposes to add a footnote (6) for Unit 2 only which states "All diesel generator starts may be preceded by an engine prelube period." This footnote is applicable to TS 4.8.1.1.2.b.3.b and 4.8.1.2.f. An engine prelube consists of lubricating internal moving

parts on the diesel engine which normally do not get lubricated when the engine is not running. This period is intended to minimize the wear on the diesel engine during surveillance testing. For the same rationale stated above for Footnote (4), the NRC staff finds that the subject TS change is acceptable.

TS 4.8.1.1.2.a.5

The licensee proposes to add at the end of the specification the following text: "and can be gradually accelerated to synchronous speed with generator voltage ⁽³⁾ ≥ 4106 volts (Unit 1) / 3994 volts (Unit 2) and ≤ 4368 volts and frequency ⁽³⁾ ≥ 58.8 Hz and ≤ 61.2 Hz." The subject change provides voltage and frequency limits for surveillance testing. The subject change was requested by the NRC staff after the review of Amendment Request Nos. 200 and 67 dated October 6, 1992.

The slight difference in voltage limits between the Unit 1 and 2 EDGs is due to a difference in design. The Unit 1 EDGs were manufactured by General Motors Electro-Motive Division. The Unit 2 EDGs were manufactured by Fairbanks Morse Engine Division of Colt Industries. For example, the licensee specified that the Unit 1 EDGs be designed to obtain 50% speed (i.e., approximately 450 rpm) when started manually in the exercise mode. The Unit 2 EDGs possesses a 50% speed of approximately 514 rpm when started manually in the exercise mode.

Based on the above information, the NRC staff finds the subject TS change consistent with the STS and, is therefore, acceptable.

Technical Specification 4.8.1.1.2.b.3.b

Similar to TS 4.8.1.1.2.a.5, the licensee proposes to add at the end of the specification the following text: "After energization of these loads, the steady state voltage ⁽³⁾ and frequency ⁽³⁾ shall be maintained at ≥ 4106 volts (Unit 1) / 3994 volts (Unit 2) and ≤ 4368 volts and frequency ⁽⁶⁾ ≥ 58.8 Hz and ≤ 61.2 Hz." Also, the licensee adds a time period requirement, "in ≤ 10 seconds", in which the EDG must energize the permanently connected loads.

Based on the above information, the NRC staff finds the subject TS change consistent with the STS and, is therefore, acceptable.

Unit 2: Page 3/4 8-3

The licensee proposes to delete footnotes denoted by * and #. Footnote * specifies that the 18-month surveillance interval during the first fuel cycle may be extended to coincide with completion of the first refueling outage. Footnote # requires that the testing of backup phase fault detection is to be implemented no later than the second refueling outage.

In addition, the licensee proposes to change "at least" to " \geq " in TS 4.8.1.1.a.6 and add a comma at the end of TS 4.8.1.1.b.4. Given that the subject TS change is administrative in nature, the NRC staff finds that the change is acceptable.

Unit 2: Page 3/4 8-4 and 8-5

TS 4.8.1.1.2.f

The licensee proposes to change "both diesel generators accelerate to at least 514 rpm in less than or equal to 10 seconds" to "each diesel generators achieves, in ≤ 10 seconds, voltage ⁽³⁾ ≥ 3994 volts and ≤ 4368 volts, and frequency ⁽³⁾ ≥ 58.8 Hz and ≤ 61.2 Hz." The existing footnote denoted by the double asterisk "***" will be replaced by Footnote (6). The licensee asserts that an equivalent verification of the diesel engine speed performance can be obtained by using the EDG voltage and frequency limits.

The NRC staff finds that the subject TS change is consistent with STS and, therefore, is acceptable.

TS 4.8.1.1.2.g

The licensee proposes to delete TS 4.8.1.1.2.g.2 which pertains to the pressure testing of the fuel oil system. Regulatory Guide 1.137, "Fuel-oil Systems for Standby Diesel Generators," states that Section 7.3 of ANSI N195-1976 requires that fuel oil systems shall provide for inservice inspection and testing in accordance with ASME Section XI. In addition, for portions of the fuel oil systems for standby diesel generators that are designed to Section III, Subsection ND of the Code, an acceptable method of meeting the requirements of Section 7.3 is to ensure that the system arrangement would allow pressure testing of the fuel oil system to a pressure 1.10 times the system design pressure at 10-year intervals. The licensee asserts that the current wording of the subject TS is very restrictive and does not allow the use of alternative test methods permitted by the ASME Code.

If the NRC staff approves the deletion of the subject TS, the licensee commits to include the following requirement in the 10-year Inservice Inspection (ISI) Plan for Unit No. 2:

During each 10-year interval of operation, a pressure test will be performed on the diesel generator fuel oil system. The test will be done according to ASME XI rule approved at the time of the tests.

By placing the subject pressure test requirement in the ISI plan, the use of alternative test methods allowed by ASME would be permitted, therefore allowing additional testing flexibility while still ensuring the integrity of the fuel oil system. Finally, the performance of the subject test is not specified in the STS.

Based on the above information, the NRC staff finds that the subject TS change is acceptable.

Miscellaneous Editorial Changes

The licensee proposes to (1) change "at least" to "≥" and add a comma at the end of sentence for TS 4.8.1.1.2.b.5; (2) add ",and" to the end of TS 4.8.1.1.2.b.6; (3) remove ")" after letter headings for existing TS 4.8.1.1.2.e) to 4.8.1.1.2.g); and (4) combine the text for TS 4.8.1.1.2.g.1) into one paragraph for TS 4.8.1.1.2.g.

Given that the subject TS changes are administrative in nature, the NRC staff finds that the changes are acceptable.

Bases: Pages B 3/4 8-2 (Unit 1) and B 3/4 8-3 (Unit 2)

The licensee proposes to replace "*" with (1) and to add text which describes what is meant by standby conditions for diesel generators. The phrase "on page 3/4 8-2" was also deleted after * footnote for Unit 2 Bases only.

In addition, for Unit 1 only, the licensee provided text describing the engineering evaluation basis for the determination of operability based upon frequency test data at lower than accident loads on the EDG.

Given that the subject Bases changes are administrative in nature, the NRC staff has no objection to these changes.

Summary

Based upon a review of the licensee's submittal, the NRC staff has concluded that the changes for diesel generator surveillance testing meet either STS, GL 84-15 or GL 93-05 guidance and as such constitute acceptable practices to improve overall diesel generator reliability and performance. Therefore, the above changes are acceptable.

Other changes involving the action statements for the A. C. power sources, Footnote (3) and Footnote (6) are consistent with the STS and are therefore, acceptable. Given the licensee commitment to incorporate the diesel fuel oil pressure test (which is currently performed by TS 4.8.1.1.2.g.2) into the licensee's ISI plan, the NRC staff finds that the deletion of the subject TS acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance 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 (60 FR 42603). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: R. Jenkins

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