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

OFFICE OF THE COMMISSIONER

August 28, 1984

MEMORANDUM FOR: Chairman Palladino
Commissioner Roberts
Commissioner Asselstine
Commissioner Bernthal
Commissioner Zech

FROM: James R. Tourtellotte, Chairman
Regulatory Reform Task Force

SUBJECT: CURRENT BACKFIT PRACTICES

A review of current backfit practices under the SRM suggests some serious problems may exist. Because more than a year has elapsed since the SRM was issued, the Commission should review the process with a view toward improvement.

Initially, it should be noted that Duquesne Light submitted eight objections to backfitting between May 30 and June 25, 1984. None of the letters have been answered and none of the issues have appeared on the NRR monthly status report on backfitting.

There are a number of things wrong with this situation. At a minimum, the licensee deserves a timely reply to the letters, even if one were to assume the Staff is right. Moreover, if the Staff has a rational basis for imposing the requirement in the first place, it would not appear to be particularly burdensome to require them to state that basis in a response to the licensee. On the other hand, if they have no rational basis, they should not be imposing a requirement.

Failure to respond for over four months with no indication of when a response will be made is fundamentally symptomatic of the complaint that the licensing process is uncertain. The inaction in this case appears to be antithetical to the Commission's objective of reducing uncertainty in the licensing process.

Inaction by the Staff works in their favor and against the licensee. This is unjustifiable and oppressive. Through Staff inaction, the licensee is drawn inexorably toward SER and licensing dates with major items open and undiscussed. Staff is fully aware that this is a way to increase leverage and put the licensee in a position where it is forced to "cave."

In addition to the Duquesne matter, the NRR Status Report suggests other possible problems.

It was my understanding that the SRM process required the Staff to provide a rationale for requiring a backfit. [redacted] If that is the case, NRR has not changed its backfit practices and all of the paper generated by the SRM is only that -- paper. For example, see the second item on page one of the status report, SA-83-2, Palisades, T. Wambach, SEP/DL. The issue is, "Single failure of MSIV could lead to a two steam generator blowdown for break upstream of MSIV." Under "status" the report states, "Licensee disagrees with reqmnt; will submit PRA by 9/84 justifying position."

Two things are wrong with this. First, the status report should have a brief statement of the rationale or at least a reference to the rationale, if one exists. Second, the status indicates that the Staff is not meeting its responsibilities but is following the old practice of requiring the licensee to prove the negative or at least that the requirement is not necessary.

Resolution of the backfit problem is crucial to bringing certainty to the licensing process. I recommend that the Commission take a stronger hand in assuring that the Staff does not perpetuate its previous backfit practices. Specifically, if the Commission does not wish to review these matters on its own, someone at the Commission office level should be appointed for oversight purposes.

To a somewhat different point, I have received a number of informal comments to the effect that the industry is still reluctant to file backfit complaints because of fear of retaliation by the NRC Staff. The Commission should correct this impression by issuing a policy statement or staff guidance.

Attachments:
A. Duquesne letters
B. NRR Backfit Status Report

cc: OGC
OPE
OI
OCA
OIA
OPA
Regional Offices
EDO
OELD
ACRS
ASLBP
ASLAP
SECY

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2NRC-4-069
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May 30, 1984

United States Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Mr. Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Identification of Backfit Requirement Number 1

Gentlemen:

In a letter dated August 31, 1984, Duquesne Light Company (DLC) received questions (Attachments 1 and 2) from the NRR-Hydrologic Engineering Branch concerning the probable maximum precipitation (PMP) and its effect on safety-related structures and components at Beaver Valley Power Station Unit 2 (BVPS-2). In reviewing these questions, DLC noted that the staff had changed their review criteria for PMP from the Hydrometeorology Report (HMR) No. 33 and Corps of Engineers EM 1110-2-1411 to HMR's Nos. 51 and 52.

In a letter to you (Attachment 3) DLC identified this NRC request as beyond the SRP criteria applicable to BVPS-2. The Draft SER Section 2.4.2.3 (Attachment 4) identified these NRR requests as open items. A meeting was held with your staff on March 21, 1984, to discuss DLC's concerns. At this meeting the staff concluded that BVPS-2 will be required to use HMR Nos. 51 and 52 for determining PMP. In a subsequent letter from the NRC dated April 11, 1984, (Attachment 5) DLC was informed that the use of the new HMR's will be required. The controls of 10CFR50.109, GNLR 84-08, and NRC Manual Chapter 0514 identify this requirement as a backfit.

DLC requests that the proposed requirement be submitted to NRC management for approval, in accordance with the Office of Nuclear Reactor Regulation (NRR) procedure for management of plant specific backfitting, prior to transmittal as a licensing requirement.

DUQUESNE LIGHT COMPANY

By E.J. Woolever
E. J. Woolever
Vice President

RW/wjs
Attachments

cc: Mr. H. R. Denton (w/attachments)
Mr. G. W. Knighton, Chief (w/attachments)
Ms. M. Ley, Project Manager (w/attachments)
Mr. M. Licitra, Project Manager (w/attachments)
Mr. G. Walton, NRC Resident Inspector (w/attachments)

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Question 240.1 (Section 2.4.2)

In determining the local PMF for Peggs Run, you need a rainfall intensity of 9.3 inch/hour. The staff does not agree that this approach is correct since 9.3 inches is the total PMP that you determined for a 1-hour period. The PMP must be broken down to appropriate time increments suitable for the drainage area and times of concentration that exist at the site. Document the adequacy of your design by using a rainfall intensity corresponding to the time of concentration for Peggs Run. Provide your estimate of time of concentration together with an explanation of how it was calculated. In addition, you should use the latest publications available to determine PMP values (refer to Question 240.8).

Response:

The response to this question will be provided at a later date.

NRC Letter: August 31, 1983

Question 240.8 (Section 2.4.2)

In determining the magnitude and temporal distribution of PMP, you used Hydrometeorological Report (HMR) No. 33, "Seasonal Variation of the Probable Maximum Precipitation East of the 105th Meridian for Areas of 10 to 100 Square Miles and Durations of 6, 12, 24, and 48 hours," 1956; and the Corps of Engineers' Civil Engineering Bulletin No. 52-8, "Standard Project Flood Determinations", 1965 (Revised).

The National Weather Service has published two newer reports that should be used to determine PMP values and distribution. The first of these reports is HMR No. 51, "Probable Maximum Precipitation Estimates, Unites States East of the 105th Meridian", June 1978. The second report is HMR No. 52 "Application of Probable Maximum Precipitation Estimates - Unites States East of the 105th Meridian", August 1982. Both of these reports should be used in your evaluation of site drainage.

Response:

The response to this question will be provided at a later date.

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November 15, 1983

United States Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Mr. Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Final Safety Analysis Report - Review Questions

Gentlemen:

As discussed in Chapter 1 of the Beaver Valley Power Station Unit 2 Final Safety Analysis Report (FSAR), the design of the station was reviewed against the Federal regulations and the NRC Standard Review Plan (SRP), NUREG-0800, dated July 1981. A recent request for additional information on the Beaver Valley docket revises the SRP criteria without following NRR procedures for such revisions. Such actions by the staff are contrary to NRR policy and have a destablizing effect on the licensing process.

On August 31, Duquesne Light Company (DLC) received several questions from the NRR Hydrologic Engineering Branch concerning the probable maximum precipitation and its effect on safety-related structures and components at Beaver Valley Unit 2. In reviewing these questions, we noted that the staff had changed their reveiw criteria for probable maximum precipitation (PMP) from the Hydrometeorological Report (HMR) No. 33 and Corps of Engineers EM 1110-2-1411 to HMR's Nos. 51 and 52 dated June 1978 and August 1982, respectively.

It is our feeling that such a change to the review criteria, especially at this stage of the Beaver Valley Unit 2 review, is not in accordance with NRR policy as outlined in NRR Office Letter No. 2, Revision 2, April 28, 1982. As noted on page 2 of this memorandum, "Staff reviewers should not decrease or go beyond the scope and requirements of any specific SRP section".

In accordance with 10CFR50.34(g), DLC submitted Section 1.8 of the FSAR which evaluated Beaver Valley Unit 2 against the SRP (NUREG-0800, July 1981) in effect six months prior to our docket date of May 18, 1983.

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Therefore, it is requested that questions 240.01 and 240.08 be rescinded and that the Beaver Valley site drainage plan be reviewed in accordance with NUREG-0800, July 1981.

DUQUEUESNE LIGHT COMPANY

By E.J. Woolever
E.J. Woolever
Vice President

ETE/wjs

cc: Mr. G. Knighton, Chief Licensing Branch No. 3
Ms. L. Lazo, Project Manager
Mr. G. Walton, NRC Resident Inspector

ATTACHMENT 5

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

APR 11 1984

APR 13 1984
Duquesne Light Co.
Nuclear Const.
Division

Docket No.: 50-412

Mr. Earl J. Woolever, Vice President
Nuclear Construction Division
Duquesne Light Company
Robinson Plaza No. 2, Suite 210
PA Route 60
Pittsburgh, PA 15205

Dear Mr. Woolever:

Subject: Beaver Valley 2 - Site Drainage Plan

The staff has reviewed your letter of November 15, 1983, in which you requested that questions 240.07 and 240.08, dealing with local flooding, be rescinded and that the Beaver Valley-2 site drainage plan be reviewed in accordance with NRC Standard Review Plan (SRP), NUREG-0800. Your request suggests that the two questions reflect an inappropriate change of our criteria with respect to evaluating flooding effects of local intense precipitation. We have concluded that questions 240.07 and 240.08 should not be rescinded, are in general conformance with the SRP, and reflect a valid safety concern.

As discussed with members of your staff at a meeting held on March 21, 1984, the staff's review procedures for evaluating flood levels have been and continue to be based on a Probable Maximum Precipitation (PMP) event. In our independent assessment of the Beaver Valley-2 site, we used current Corp of Engineers and National Weather Service Methodology (Hydrometeorology Reports Numbers 51 and 52) to determine the PMP depth. The analytical methods used by the staff are in accordance with generally accepted hydrological principals and procedures. Consideration of improvements in calculational methods is specifically addressed in NUREG-0800, Section 2.4.2 under "Review Procedures." NUREG-0800 further provides for considerable flexibility in resolving potential flooding problems, recognizing that at the OL stage the range of solutions may be limited by the status of plant construction.

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Estimates of potentially excessive site water levels, based on PMP, constitute a potential safety problem that must be addressed. Questions 240.01 and 240.08 are necessary to further quantify this analysis, and should therefore be responded to by your staff.

We appreciate meeting with your staff on March 21, 1984, in which the technical aspects of this issue were discussed.

Sincerely,

T. M. Novak

Thomas M. Novak, Assistant Director
for Licensing
Division of Licensing

cc: See next page

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May 30, 1984

United States Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Mr. Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Identification of Backfit Requirement Number 17

Gentlemen:

Beaver Valley Power Station Unit 2's (BVPS-2) primary fire suppression system in the cable spreading room is an automatic, total flooding, carbon dioxide system. Backup suppression is provided by permanent hose stations. The NRC staff has informed DLC in Attachment 1 (Draft SER pages 9-26 and 9-27) that this approach to fire suppression in the cable spreading room "does not meet staff guidelines." The staff is requiring ". . the applicant to provide protection of the cable spreading room in accordance with Section C.7.c of the BTP CMEB 9.5-1." The guidance in the BTP CMEB 9.5-1 suggests that the primary fire suppression system should be an automatic water system, however, gas system review guidance is provided. The use of carbon dioxide as the primary means of fire suppression in the cable spreading room was originally presented in the BVPS-2 PSAR and was not identified as unacceptable by the NRC in the CP-SER.

DLC believes the fire suppression system in BVPS-2's cable spreading room meets the intent of the BTP-CMEB 9.5-1 guidelines and complies with the requirements of General Design Criteria 3 and 5, 10CFR50.48, and 10CFR50, Appendix R (applicable to plants with OL's prior to January 1, 1979). Unless the basis for this new requirement can be demonstrated as an existing regulation, the controls of 10CFR50.109, GNLR 84-08, and NRC Manual Chapter 0514 identify the requirement as a backfit.

DLC requests that the proposed requirement be submitted to NRC management for approval, in accordance with the Office of Nuclear Reactor Regulation (NRR) procedure for management of plant specific backfitting, prior to transmittal as a licensing requirement.

DUQUESNE LIGHT COMPANY

By E. J. Woolever
E. J. Woolever
Vice President

RW/wjs
Attachment

cc: Mr. H. R. Denton (w/attachment)
Mr. G. W. Knighton, Chief (w/attachment)
Ms. M. Ley, Project Manager (w/attachment)
Mr. M. Licitra, Project Manager (w/attachment)
Mr. G. Walton, NRC Resident Inspector (w/attachment)

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~~complex meet staff guidelines. The staff will require these rooms to be~~
separated from the main control room by 1-hour-rated barriers, and provided
with automatic suppression and detection in accordance with Section C.7.b of
BTP CMEB 9.5-1.

All cables entering the control room terminate there. No cables are routed
through the control room from one area to another. There is a section of
raised floor between the main control board and the benchboard. All cables in
the underfloor are in conduits. This is acceptable because cables completely
enclosed in metal conduits do not add to the combustible loading in the area.

Ionization smoke detectors have been installed in the control room as well as
inside the individual cabinets and consoles within the control room.

The applicant has provided an alternate shutdown system for the control room.
The alternate shutdown system is reviewed in Section 9.5 of this report.

The outside air intakes for the control room's ventilation system are equipped
with smoke detectors that alarm in the control room. In the event of a fire,
the smoke venting system can be manually inititated to purge smoke from the
~~control room, or isolated to keep smoke from entering the control room.~~

Cable Spreading Room

The cable spreading room is separated from the balance of the plant by
3-hour-fire-rated walls and floor/ceiling assemblies. All penetrations
through fire-rated barriers are fitted with 3-hour-fire-rated dampers and/or
3-hour-fire-rated penetration seals.

An alternate shutdown system has been provided for the cable spreading room.
The alternate shutdown system is reviewed in Section 9.5 of this report.

The primary fire suppression system in the cable spreading room is an automatic
redundant total flooding carbon dioxide system. Backup suppression capability
for the cable spreading room is provided by the plant fire brigade. This does
not meet the staff guidelines. The staff will require the applicant to provide

protection of the cable spreading room in accordance with Section C.7.c of BTP CMEB 9.5-1.

Switchgear Rooms

The Division I and Division II switchgear rooms are separated from each other and from other plant areas by 3-hour-fire-rated walls and floor/ceiling assemblies.

Automatic fire detection is provided by ionization smoke detectors. Manual protection is provided by standpipe hose stations and portable extinguishers. Floor drains have been provided in the switchgear rooms. On the basis of its review, the staff concludes that the protection provided for the switchgear room is in accordance with Section C.7.e of BTP CMEB 9.5-1, and is, therefore, acceptable.

Remote Safety-Related Panels

Redundant safety-realted panels remote from the main control room will be separated by barriers having a minimum fire rating of 3 hours. On the basis of its review, the staff concludes that the protection provided for remote safety-related panels meets Section C.7.f of BTP CMEB 9.5-1, and is, therefore, acceptable.

Safety-Related Battery Rooms

The battery rooms are separated from each other and from the balance of the plant by 3-hour-fire-rated barriers. Ionization smoke detection systems are provided in each battery room. Hose stations and portable fire extinguishers are available in the areas for manual fire suppression. The ventilation system is designed to maintain the hydrogen levels below 2%. Loss of ventilation alarms have been provided for each battery room. On the basis of its review, the staff concludes that the protection provided for the battery rooms ~~meets Section C.7.g of BTP CMEB 9.5-1, and is, therefore, acceptable.~~

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May 30, 1984

United States Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Mr. Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Identification of Backfit Requirement Number 9

Gentlemen:

In Draft SER Section 7.3.3.12 (attached), the NRC identified the concern that the steam generator level control design did not meet the requirements of Paragraph 4.7 of IEEE 279. Duquesne Light Company (DLC) responded to this concern in letter 2NRC-4-032 to G. W. Knighton dated March 28, 1984. In the response, DLC explained that compliance with IEEE 279 is not required in this case because core protection is maintained even if the very specific failures postulated by the NRC were to occur. The NRC responded to this in a letter from Mr. G. W. Knighton to Mr. E. J. Woolever dated May 8, 1984, indicating that DLC would either need to modify the steam generator level control design to comply with IEEE-279 or need to provide an analysis showing that the consequences of feedwater addition are not safety significant.

The BVPS-2 PSAR describes the standard Westinghouse three channel design. This document provides the basis for the issuance of the BVPS-2 construction permit. Additionally, despite the existance of IEEE 279 since 1971, numerous operating Westinghouse PWR's have steam generator level systems similar to that provided for BVPS-2. Therefore, it appears that Mr. Knighton's May 8, 1984, letter transmits a new requirement without full implementation of NRR procedures based on 10CFR50.109; Generic Letter 84-08; and NRC Manual, Chapter 0514.

DLC requests that the proposed requirement be submitted to NRC management for approval, in accordance with the Office of Nuclear Reactor Regulation (NRR) procedure for management of plant specific backfitting, prior to transmittal as a licensing requirement.

DUQUESNE LIGHT COMPANY

COPY

By E. J. Woolever
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KAT/wjs
Attachment

8406050091 PDR

cc: Mr. H. R. Denton (w/attachment)
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Ms. M. Ley, Project Manager (w/attachment)
Mr. M. Licitra, Project Manager (w/attachment)
Mr. G. Walton, NRC Resident Inspector (w/attachment)

7.3.3.12 Steam Generator Level Control and Protection

Three steam generator level channels are used in a two-out-of-three logic for
isolation of feedwater on high steam generator level. One of the three level
channels is used for control. This design for actuation of feedwater isola-
tion does not meet the requirements of Paragraph 4.7 of IEEE 279, "Control and
Protection System Interaction," in that the failure of the level channel used
for control could require protective action and the remainder of the protection
system channels would not satisfy the single-failure criterion. The applicant
has not responded to this concern. This is an open item.

7.3.3.13 IE Bulletin 80-06 Concerns

IE Bulletin 80-06 requests a review of all systems serving safety-related func
tions to ensure that no device will change position solely because of the reset
of a ESF actuation signal. The applicant was requested to respond to IE
Bulletin 80-06.

The staff has reviewed the applicant's response in FSAR Amendment 4 and finds
that the applicant has reviewed only the specific potential problems listed in
IE Bulletin 80-06. The intent of IE Bulletin 80-06 and NRC question 420.1 was
to require all safety-related systems to be reviewed. This item is open until
a complete response is provided by the applicant.

7.3.3.14 Independence Between Manual and Automatic Actions

The applicant's response to IE Bulletin 80-06 states: "All circuitry for com
ponents actuated by an ESF actuation signal have been designed such that the
ESF signal cannot be overridden manually or automatically with an ESF actuati
signal present. A component may be reset by first resetting the ESF actuatio
signal and then manually resetting the component." The staff's review of the
transfer from the control room to the ESP revealed that safety injection pum
cannot be stopped manually if SI is initiated after the transfer.

The staff is concerned that, under accident conditions, as well as in the ca
of independent initiation of safety actions, the [illegible]

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June 15, 1984

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ATTENTION: Mr. Darrell G. Eisenhut, Director
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Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Identification of Backfit Requirement Number 4

Gentlemen:

On April 27, 1973, Duquesne Light Company (DLC) provided a description of the Air Starting Systems for Emergency Diesel Generators in Amendment 4 to the Beaver Valley Power Station Unit 2 (BVPS-2) Preliminary Safety Analysis Report (PSAR). This description is included here as Attachment 1.

On November 9, 1973, the U.S. Atomic Energy Commission issued the Construction Permit stage Safety Evaluation Report (CP-SER). The CP-SER, in review of the proposed Emergency Diesel design (Attachment 2) states, "We have concluded that this design commitment is acceptable."

On September 19, 1983, the NRC staff issued questions 430.97 and 430.100 (Attachment 3). Question 430.100 states, "... we require that compressed air starting system designs include air dryers for the removal of entrained moisture." In this question, the NRC staff directs, "Revise your design of the diesel engine air starting system accordingly ...." Attachment 3 (originally Attachment 3 to DLC letter 2NRC-4-032, dated March 28, 1984) also includes the DLC responses to questions 430.97 and 430.100. In these responses DLC has appropriately addressed the technical aspects of the question. A draft copy of this response had previously been provided to the staff reviewer. In a telephone conference with DLC (February 22, 1984), the staff reviewer indicated that his concerns were not satisfied and that air dryers would be required. He cited NUREG/CR 0660, "Enhancement of On-site Emergency Diesel Generator Reliability" (the University of Dayton study referenced in question 430.100) as his basis for requiring that DLC install air dryers.

Section 9.5.6 of the Standard Review Plan (SRP), Rev. 2, July 1981, has incorporated the recommendations of NUREG/CR 0660 as guidance in Paragraph II.4. However, Paragraph III of this section states:

> "The procedures below are used during the construction permit (CP) review to determine that the design criteria and bases and the preliminary design as set

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> forth in the preliminary safety analysis report meet the acceptance criteria given in subsection II of this SRP section. For the review of operating license (OL) applications, the procedures are used to verify that the initial design criteria and bases have been appropriately implemented in the final design as set forth in the final safety analysis report."

The requirement to change the system design, after the initial design was approved at the issuance of the CP is a "backfit" as identified in 10CFR50.109. The change in the implementation of the SRP review procedure represents a new position on requirements and is identified as a "backfit" in Generic Letter 84-08 and the implementing NRC procedures.

DLC requests that the proposed requirement be submitted to NRC management for approval, in accordance with the Office of Nuclear Reactor Regulation (NRR) procedure for management of plant specific backfitting, prior to transmittal as a licensing requirement.

DUQUESNE LIGHT COMPANY

By E. J. Woolever
E. J. Woolever
Vice President

RW/wjs
Attachments

cc: Mr. H. R. Denton (w/attachments)
Mr. G. W. Knighton, Chief (w/attachments)
Ms. M. Ley, Project Manager (w/attachments)
Mr. M. Licitra, Project Manager (w/attachments)
Mr. G. Walton, NRC Resident Inspector (w/attachments)

Air Starting Systems for Emergency Diesel Generators

Design Basis

Separate air starting systems are provided for the emergency diesel generators. Each diesel generator is isolated from the other diesel generator.

The emergency diesel generator air starting system is shown in Fig. Response 8.12(2)-1. Each diesel engine drive is provided with 2 independent redundant starting systems, both capable of starting the engine without outside power. Each independent starting system includes an ac motor-driven air compressor, air storage tanks, air starting motors, all necessary valves and fittings, and complete instrumentation and control systems. All components will be missile protected, seismic Category I equipment.

The air storage tanks capacity is capable of providing 5 generator engine starts without outside power. The tanks are made of welded steel plate and will conform in all respects to the latest published edition of ASME Boiler and Pressure Vessel Code, Section III, Nuclear Power Plant Components, Class 3.

System Design and Operation

Each diesel engine is supplied with 2 independent air starting systems, both capable of starting the engine. The air starting system is shown in Fig. Response 8.12(2)-3.

A 2 position preferred start selector switch is provided to determine which bank of dual air starting motors will be used for the initial start. Position 1 will engage the starting motors on the left side of the engine (viewing from the generator end) and Position 2 engages air starting motors on the right side of the engine.

Upon receiving a start signal, the solenoid valve is energized, allowing air from the tanks to pass through the solenoid valve to the pinion gear end of the lower starting motor. The entry of air moves the pinion gear forward to engage with the engine ring gear. Movement of the pinion gear uncovers a port, allowing air pressure to be released to the upper starting motor, which, in turn, engages its pinion gear with the engine ring gear. With both pinion gears engaged, the air is released from the uncovered port in the upper motor. The released air closes the air relay valve, which, in turn, opens the air starting valve and releases the main starting air supply. Starting air passes through the air line lubricator, releasing an oil-air mist into the starting motors. The multivane motors drive the pinion gears, rotating the ring gear, and cranking the engine.

4. Maintenance outage or failure of any one starting valve and/or piping.

Tests and Inspections

The air starting system will be hydrostatically tested during construction, and all active system components are functionally tested during startup, and periodically thereafter. The air storage tanks are periodically checked for water, oil, sediment, etc., to determine possible contamination or corrosion. The frequency of the periodic tests is given in Section 16.

Combustion Air Intake and Exhaust Systems for Emergency Diesel Generators

Design Basis

Each emergency diesel generator is supplied with its own separate air intake and exhaust system. The system is designed to supply sufficient combustion air to operate the diesel engine at rated power during worst atmospheric conditions.

Each diesel generator is isolated from the other diesel generator by a missile-proof wall. Each independent intake and exhaust system will be located in the cubicle of the diesel that it serves. This design incorporates sufficient redundancy to prevent a malfunction or failure of an active or passive component from impairing the ability of at least one emergency diesel generator to function properly.

The intake and exhaust systems will be missile protected and designed to seismic Category I requirements.

System Design and Operation

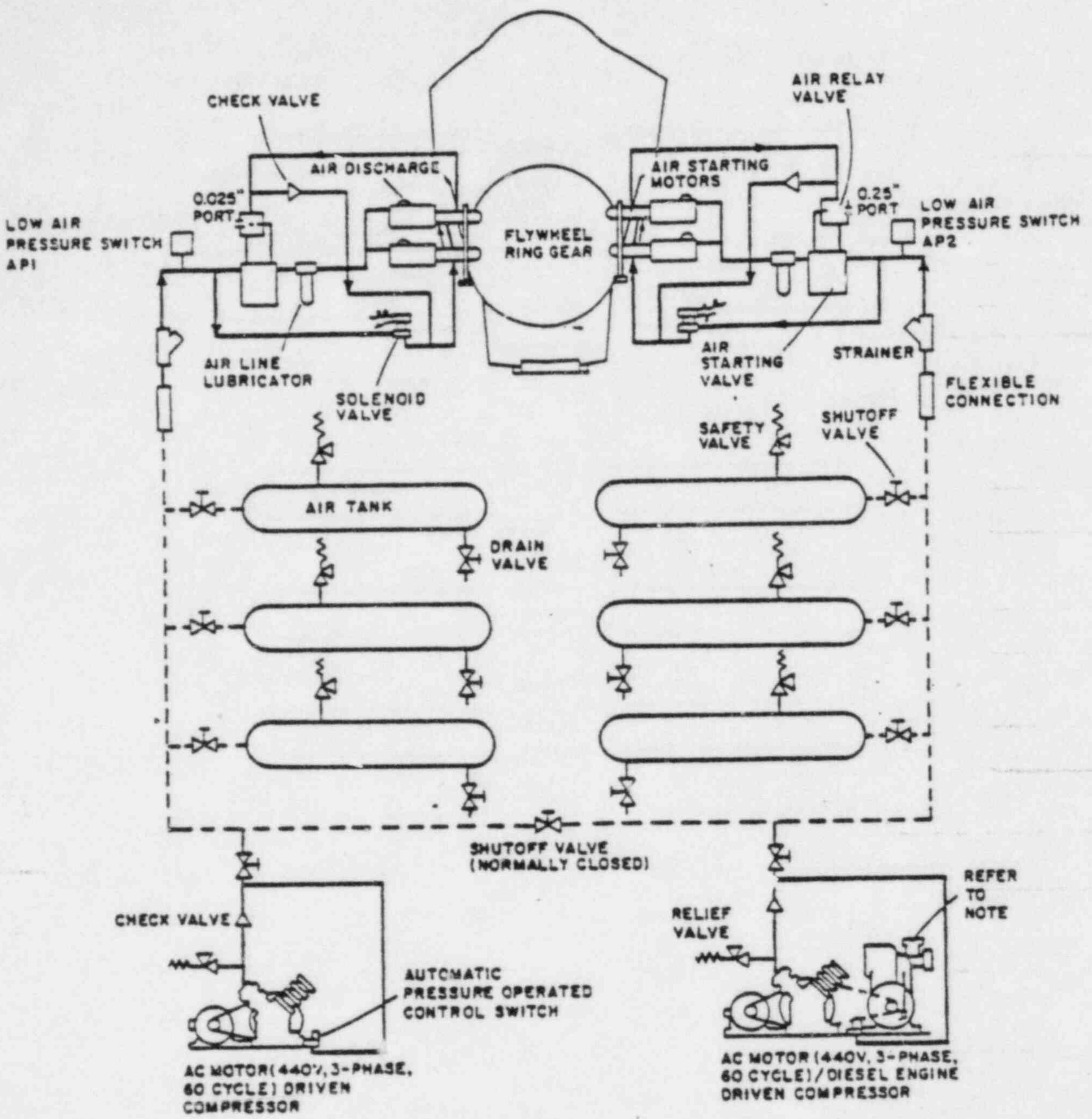
The arrangement of the Diesel Generator Building is shown in Fig. 15.1-23. Each combustion air intake and exhaust system consists of:

1. Two motor-operated inlet dampers

   Consists of missile-protected redundant dampers to allow combustion air into the diesel cubicle.

2. Engine air intake filter assembly

   Consists of 9 panel type oil bath filters that are mounted on the main generator.



NOTE:
To drive compressor with engine, belt must be changed over manually.

FIG. RESPONSE 8.12(2)-3
AIR STARTING SYSTEM
BEAVER VALLEY POWER STATION-UNIT 2
PRELIMINARY SAFETY ANALYSIS REPORT

The safety loads for Beaver Valley Unit 2 will be distributed evenly between the two distribution systems with the exception of those loads that provide extra redundancy, such as the high pressure injection pump and service water pump. Each of these loads can be powered from either distribution system through separate breakers and one isolating transfer switch which aligns the load to the selected distribution system bus. The selection of the power feed will be accomplished manually through key-interlocked bus-transfer switches which prevent interconnection of the power supplies.

In addition, the design will include the capability for disconnecting selected loads from the emergency buses that will not be required to operate during the containment isolation phase B of the accident which encompasses spray actuation. The applicants have stated that this capability will be provided to protect against diesel generator overloading. Since the diesel generators have not been selected, the need for this load shedding capability has not been established. Should this capability be required, we will evaluate it when the characteristics of the diesel generators are known. However, we believe that this capability can be satisfactorily implemented and, thus, satisfies our present evaluation requirements.

The applicants have not selected the diesel generator units for this plant. However, to satisfy our requirements, they have agreed to obtain a diesel generator(s) that has been previously qualified

ATTACHMENT 3

Respone to FSAR Questions 430.97 and 430.100

Question 430.97 (Section 9.5.6)

Provide a discussion of the measures that have been taken in the design of the standby diesel generator air starting system to preclude the fouling of the air start valve or filter with moisture and contaminants such as oil carryover and rust (SRP 9.5.6, Part III).

Response:

Refer to the response to Question 430.100.

Question 430.100 (Section 9.5.6)

A study by the University of Dayton has shown that accumulation of water in the starting air system has been one of the most frequent causes of diesel engine failure to start on demand. Condensation of entrained moisture in compressed air lines leading to control and starting air valves, air start motors, and condensation of moisture on the working surfaces of these components has caused rust, scale, and water itself to build up and score and jam the internal working parts of these vital components thereby preventing starting of the diesel generators.

In the event of loss of offsite power, the diesel generators must function since they are vital to the safe shutdown of the reactor(s). Failure of the diesel engines to start from the effects of moisture condensation in air starting systems and from other causes have lowered their operational reliability to substantially less than the desired reliability of 0.99 as specified in Branch Technical Position ICSB (PSB) 2, "Diesel Generator Reliability Testing," and Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units used as Onsite Electrical Power Systems at Nuclear Power Plants."

In an effort toward improving diesel engine starting reliability, we require that compressed air starting system designs include air dryers for the removal of entrained moisture. The two air dryers most commonly used are the dessicant and refrigerant types. Of these two types, the refrigerant type is the one most suited for this application and, therefore, is preferred. Starting air should be dried to a dew point of not more than 50°F when installed in a normally controlled 70°F environment, otherwise, the starting air dew point should be controlled to at least 10°F less than the lowest expected ambient temperature.

Revise your design of the diesel engine air starting system accordingly, describe this feature of your design. Also expand your FSAR to discuss the procedures that will be followed to ensure the dryers are working properly and the frequency of checking/testing (SRP 9.5.6, Parts II and III).

NUREG
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U.S. NUCLEAR REGULATORY COMMISSION
STANDARD REVIEW PLAN
OFFICE OF NUCLEAR REACTOR REGULATION

SECTION 9.5.6 EMERGENCY DIESEL ENGINE STARTING SYSTEM

REVIEW RESPONSIBILITIES

Primary - Power Systems Branch (PSB)

Secondary - Auxiliary Systems Branch (ASB)
Mechanical Engineering Branch (MEB)
Structural Engineering Branch (SEB)
Materials Engineering Branch (MTEB)

I. AREAS OF REVIEW

The PSB review of the emergency diesel engine starting system EDESS includes those system features necessary to assure reliable starting of the emergency diesel engine following a loss of offsite power to assure conformance with the requirements of General Design Criteria 2, 4 and 5. The review includes the system air compressors, air receivers, devices to crank the diesel engine, valves, piping, filters, and associated ancillary instrumentation and control systems.

1. The PSB reviews the EDESS to verify that:

   a. Each emergency diesel engine has reliable, redundant starting systems of adequate starting capacity.

   b. The system complies with appropriate seismic requirements and quality standards, and has been properly designed, fabricated, erected, and tested.

   c. Essential portions of the system are housed within seismic Category I structures capable of protecting the system from extreme natural phenomena, missiles, and the effects of pipe whip or jet impingement from high and moderate energy pipe breaks.

2. The PSB will determine the adequacy of design, installation, inspection and testing of all electrical components (sensing, control and power) required for proper operation of the system, including interlocks.

3. The applicant's proposed technical specifications are reviewed for operating license applications as they relate to areas covered in this SRP section.

Secondary reviews are performed by other branches and the results used by the PSB to complete the overall evaluation of the system. The evaluations performed by others are as follows. The SEB determines the acceptability of the design analyses, procedures, and criteria used to establish the ability of structures housing the system to withstand the effects of natural phenomena such as the safe shutdown earthquake (SSE), the probable maximum flood (PMF), and tornado missiles. The MEB reviews the seismic qualification testing of components and confirms that components, piping, and structures are designed in accordance with applicable codes and standards. The ASB determines that the assigned seismic and quality group classifications for system components are acceptable. The ASB also determines that the EDESS is in accordance with Branch Technical Positions ASB 3-1 and MEB 3-1 for breaks in high energy and moderate energy piping systems outside containment. The MTEB verifies that inservice inspection requirements are met for system components and, upon request, will verify the compatibility of the materials of construction with service conditions.

II. ACCEPTANCE CRITERIA

Acceptability of the diesel engine starting system, as described in the applicant's safety analysis report (SAR), is based on specific general design criteria and regulatory guides. An additional basis for acceptability is the similarity of the EDESS design with that of previously reviewed plants having satisfactory operating experience.

The design of the EDESS is acceptable if the integrated design of the system is in accordance with the following criteria:

1. General Design Criterion 2, as related to the ability of structures housing the system to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, and floods, as established in Chapters 2 and 3 of the SAR.

2. General Design Criterion 4, with respect to structures housing the systems and the system itself being capable of withstanding the effects of external missiles and internally-generated missiles, pipe whip, and jet impingement forces associated with pipe breaks.

3. General Design Criterion 5, as related to the capability of shared systems and components important to safety to perform required safety functions.

4. Regulatory Guide 1.26, as related to quality group classification of the system components.

5. Regulatory Guide 1.29, as related to the system seismic design classification.

6. Regulatory Guide 1.68, as related to preoperational and startup testing of the air starting system.

7. Branch Technical Positions ASB 3-1 and MEB 3-1, as related to breaks in high and moderate energy piping systems outside containment.

8. Branch Technical Position ICSB-17 (PSB), as related to engine air starting system protective interlock during accident conditions.

9. The EDESS should also meet the following specific criteria:

   a. Each diesel engine should be provided with an air compressor and with independent and redundant starting systems, each consisting of two air receivers, injection lines and valves, and devices to crank the engine.

   b. As a minimum, each of the redundant starting systems should be capable of cranking a cold diesel engine five times without recharging the receivers. Each cranking cycle duration should be approximately three seconds, or consist of two to three engine revolutions, whichever cranking cycle time interval is larger.

   c. Alarms should be provided which alert operating personnel if the air receiver pressure falls below the minimum allowable value.

   d. Provisions should be made for the periodic or automatic blowdown of accumulated moisture and foreign material in the air receivers.

For those areas of review identified in subsection I of this SRP section as being the responsibility of other branches, the acceptance criteria and their methods of application are contained in the SRP sections corresponding to those branches.

III. REVIEW PROCEDURES

The procedures below are used during the construction permit (CP) review to determine that the design criteria and bases and the preliminary design as set forth in the preliminary safety analysis report meet the acceptance criteria given in subsection II. For the review of operating license (OL) applications, the procedures are used to verify that the initial design criteria and bases have been appropriately implemented in the final design as set forth in the final safety analysis report. The review procedures for OL applications include a determination that the content and intent of the technical specifications prepared by the applicant are in agreement with the requirements for system testing, minimum performance, and surveillance developed during the review. The reviewer will select and emphasize material from the paragraphs below, as may be appropriate for a particular case.

Upon request from the primary reviewer, the secondary review branches will provide input for the areas of review stated in subsection I. The primary reviewer obtains and uses such input as required to assure that this review procedure is complete.

1. The reviewer establishes that the EDESS description and piping and instrumentation drawings (P&IDs) clearly delineate all modes of operation and include the means for monitoring, indicating, and controlling receiver air pressure as required by the engine starting service. The P&IDs are reviewed to determine that each receiver [illegible]

means of maintaining the receiver pressure within an allowable range, and suitable low pressure alarms. If there are piping interconnections between shared systems, they are reviewed to verify that failure could not lead to the loss of starting of more than one diesel engine. The building layout drawings are examined to ascertain that sufficient space has been provided around the components to permit inspection. The reviewer verifies that essential portions of the EDESS are classified seismic Category I.

2. The SAR is reviewed to assure that each diesel engine has its own compressor and that the compressor capacity is adequate with respect to the air receiver capacities of the redundant starting systems.

3. The reviewer verifies that the system has been designed to be operated and maintained in the event of adverse environmental conditions such as hurricanes, tornadoes, or floods, and is protected against the effects of internally- or externally-generated missiles.

4. The reviewer determines that the failure of non-seismic Category I systems, structures, or components located close to the EDESS will not preclude operation of the system.

5. The reviewer determines that essential portions of the EDESS are protected from the effects of high and moderate energy line breaks. Layout drawings are reviewed to assure that no high or moderate energy piping systems are close to the system, or that protection from the effects of failure are provided. The means of providing such protection are discussed in Section 3.6 of the SAR and the procedures for reviewing this information are given in the corresponding SRP sections.

6. The SAR information, P&IDs, related system drawings, and failure modes and effects analyses are reviewed to assure that minimum requirements of the system will be met following design bases accidents, assuming a concurrent single active failure and loss of offsite power. The analyses presented in the SAR are reviewed to assure function of required components following postulated accidents. Utilizing the descriptions, related drawings, and analyses, the reviewer verifies that minimum system requirements are met for each design situation over the required time spans. For each case the design is considered acceptable if minimum system requirements are met.

IV. EVALUATION FINDINGS

The reviewer verifies that the information provided and his review support conclusions of the following type, to be included in the staff's safety evaluation report:

"The emergency diesel engine starting system includes the features necessary to assure that the system will be available and capable of starting the diesel engine following a loss of offsite power. The scope of review of the system for the ______________

______________ plant included layout drawings, flow diagrams, piping and instrumentation diagrams, and descriptive information for the emergency diesel engine starting system and supporting systems essential to its operation. [The review has determined the adequacy of the applicant's proposed design criteria and design bases for the system, and the provisions necessary for diesel engine starting during all conditions of plant operation. (CP)] [The review has determined that the design of the emergency diesel engine starting system and supporting systems is in conformance with the design criteria and bases. (OL)]

"The basis for acceptance in the review has been conformance of the applicant's designs and design criteria for the emergency diesel engine starting system and necessary supporting systems to the Commission's regulations as set forth in the General Design Criteria, and to applicable regulatory guides, staff technical positions, and industry standards.

"The staff concludes that the design of the emergency diesel engine starting system conforms to all applicable regulations, guides, staff positions, and industry standards, and is acceptable."

V. REFERENCES

1. 10 CFR Part 50, Appendix A, General Design Criterion 2, "Design Bases for Protection Against Natural Phenomena."

2. 10 CFR Part 50, Appendix A, General Design Criterion 4, "Environmental and Missile Design Bases."

3. 10 CFR Part 50, Appendix A, General Design Criterion 5, "Sharing of Structures, Systems, and Components."

4. Regulatory Guide 1.26, "Quality Group Classifications and Standards For Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants."

5. Regulatory Guide 1.29, "Seismic Design Classification."

6. Regulatory Guide 1.68, "Initial Test Programs for Water Cooled Reactor Power Plants."

7. Branch Technical Positions ASB 3-1, "Protection Against Postulated Piping Failures in Fluid Systems Outside Containment," attached to SRP Section 3.6.1, and MEB 3-1, "Postulated Break and Leakage Locations in Fluid System Piping Outside Containment," attached to SRP Section 3.6.2.

8. Branch Technical Position ICSB-17 (PSB), "Diesel Generator Protective Trip Circuit Bypasses," attached to SRP Appendix 8-A.

SAFETY GUIDE 9

SELECTION OF DIESEL GENERATOR SET CAPACITY FOR STANDBY POWER SUPPLIES

A. Introduction

General Design Criterion 17 requires that the onsite (standby) power supply for a nuclear power plant be of sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents. Diesel generator sets have been widely used as the power source for the standby power supplies. This safety guide describes an acceptable basis for the selection of diesel generator sets of sufficient capacity and margin to implement General Design Criterion 17.

B. Discussion

A diesel generator set selected for use as a standby power supply should have the capability to (1) start and accelerate a number of large motor loads in rapid succession, and be able to sustain the loss of any such load, and (2) supply continuously the sum of the loads needed to be powered at any one time. This guide provides an acceptable way of assuring these objectives are met. The considerations involved in the need for the diesel generator to start and achieve rated conditions in a short period of time are evaluated on an individual case basis.

A knowledge of the characteristics of each load is essential in establishing the bases for the selection of a diesel generator set that is able to accelerate large loads in rapid succession. The majority of the emergency loads are large induction motors. This type of motor draws, at full voltage, a starting current five to ten times its rated load current. The sudden, large increases in current drawn from the diesel generator resulting from the startup of induction motors can result in substantial voltage reductions. The lower voltage could prevent a motor from starting or cause a running motor to coast down. Other loads also might be lost if their contactors drop out. Recovery from the transient caused by starting large motors or from the loss of a large load could cause diesel engine overspeed which, if excessive, might result in a trip of the machine. These same consequences also can result from the cumulative effect of a sequence of more moderate transients if the system is not permitted to recover sufficiently between successive steps in a loading sequence.

Generally it has been industry practice to specify a maximum voltage reduction of 15 percent when starting large motors from large capacity power systems and a 25 to 30 percent voltage reduction when starting these motors from limited capacity power sources such as diesel generator sets. Large induction motors supplied with nominal voltage can achieve rated speed in less than 5 seconds when powered from adequately sized diesel generator sets which are capable of restoring the voltage to 90 percent of nominal in about 1 second.

Protection of the diesel generator set from excessive overspeed, which can result from a loss of load, is afforded by the provision of a diesel generator set trip, usually set at 115 percent of nominal speed.

A problem arises in assessing whether the goal of continuously supplying the sum of the needed loads is achieved with sufficient capacity and margin, because of the various interpretations of load ratings quoted by diesel generator suppliers. The load ratings represent the loads at which the set can operate continuously with a high availability, if various specified maintenance programs are followed. The nominal rating, used as a datum for the overload ratings, has been termed variously the "continuous," "guaranteed," or "long term" rating. The definition used throughout this guide for "continuous rating" is "that load for which the supplier guarantees continuous operation at a high availability (expected to be about 95%) with an annual maintenance interval". The overload ratings are similarly defined except that the specified maintenance intervals are shorter. For example, the following are the load ratings of a typical diesel generator set:

Ratings		*Maintenance Interval*
Continuous	2500 kW	Annual (8760 hr)
Overload	2850 kW	2000 hr
	2950 kW	7 day
	3050 kW	30 min

If the power output is increased into the overload ratings, wearout is accelerated and the maintenance interval needed to assure high reliability is reduced. This discussion assumes that the diesel generator set is utilized solely as a standby power supply and that it does not serve a secondary function such as power generation for peak demand periods of a transmission network. The secondary functions, since they would affect wearout and availability of the diesel generator set, will be evaluated on an individual case basis. If found acceptable, the total amount of operation between maintenance intervals will be limited by the technical specifications. This guide covers diesel generator sets used solely as a standby power supply which is the design most widely adopted.

The tabulation illustrates the sensitivity of the deterioration rate to increases in load above the continuous rating. For example, if the design basis loading were that corresponding to the 2000-hour rating, an error of only 8 percent in estimating the loads could result in operation at the 30-minute rating. Although operation at the 30-minute rating would not be expected to stall the engine, such operation could lead to the danger of early failure.

The uncertainties inherent in estimates of safety loads at the construction permit stage of design are of such magnitude that it is prudent to provide a substantial margin in the selection of the diesel generator set load capability. This margin can be provided by estimating the loads conservatively and by selecting the continuous rating of the diesel generator set so that it exceeds the sum of the loads needed at any one time. A more accurate estimate of safety loads is possible during the operating license stage of review due to the completion of the detailed designs and the availability of preoperational test data. This permits the consideration of a somewhat less conservative approach, such as operation with safety loads within the 2000 hour overload rating of the diesel generator set. A conservative estimate of safety loads based on design or measurements taken during preoperational testing of engineered safety features does not, however, represent with certainty the actual loads experienced under accident conditions. Therefore, an adequate margin is still essential.

C. Regulatory Position

1. At a time when the characteristics of loads are not accurately known, such as during the construction permit stage of design, each diesel generator set on a standby (onsite) power supply should be selected to have a continuous load rating equal to or greater than the sum of the conservatively estimated loads needed to be powered at any one time. In the absence of fully substantiated performance characteristics for mechanical equipment such as pumps, the electric motor drive ratings should be calculated using conservative estimates of these characteristics. (For example, pump run-out conditions and motor efficiencies of 90% or less.)
2. At the operating license stage of review, the predicted loads should not exceed the smaller of the 2000-hour rating, or 90 percent of the 30-minute rating of the set.
3. During preoperational testing, the predicted loads should be verified by tests.
4. Each diesel generator set should be capable of starting and accelerating to rated speed, in the required sequence, all the needed engineered safety feature and emergency shutdown loads. At no time during the loading sequence should the frequency and voltage de-

crease to less than 95 percent of nominal and 75 percent of nominal, respectively. During recovery from transients caused by step load increases or resulting from the disconnection of the largest single load, the speed of the diesel generator set should not exceed 75 percent of the difference between nominal speed and the overspeed trip set point or 115 percent of nominal, whichever is lower. Voltage should be restored to within 10 percent of nominal and frequency should be restored to within 2 percent of nominal in less than 40 percent of each load sequence time interval.

5. The suitability of each diesel generator set of the standby power supply should be confirmed by prototype qualification test data and preoperational tests.

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June 15, 1984

United States Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Mr. Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Identification of Backfit Requirement Number 5

Gentlemen:

In Draft SER Section 7.3.3.15 (attached), the NRC identified the concern that certain motor-operated valves, such as those for cold-leg accumulator isolation, could have circuitry which could have a nondetectable failure. Duquesne Light Company responded to this concern in letter 2NRC-4-032 of March 28, 1984, by proposing a circuit modification. The NRC responded to this in a letter from Mr. G. W. Knighton to Mr. E. J. Woolever dated May 8, 1984, describing even more circuit modifications which would be necessary to satisfy the staff's understanding of IEEE-279. DLC has re-evaluated the design as described in letter 2NRC-4-076, dated June 8, 1984, to the NRC and concluded that the existing design complies with IEEE-279 in that the valves are administratively controlled and monitored to insure that no "protective action" is required.

Historically, the design of the valve control for this type of valve has included provisions to administratively remove the power to the valve operators in order that the valves were not inadvertently shut when accumulator avaiability was required. In addition to administrative control of power removal, the Beaver Valley Power Station Unit 2 design includes provision to continuously monitor the valve position. The staff position that the circuit should be designed against a nondetectable failure appears to constitute a new interpretation of IEEE-279. 10CFR 50.109, GNLR 84-08, and NRC Manual Chapter 0514 identify such a requirement as a backfit.

DLC requests that the proposed requirement be submitted to NRC management for approval, in accordance with the Office of Nuclear Reactor Regulation (NRR) procedure for management of plant specific backfitting, prior to transmittal as a licensing requirement.

DUQUESNE LIGHT COMPANY

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Mr. M. Licitra, Project Manager (w/a)
Mr. G. Walton, NRC Resident Inspector (w/a)

~~exercise control could lead to consequential damage of safety-related equipment or prevent initiation of protection systems. The staff favors independence between manual and automatic safety-related actions and believes that a safety-significant issue may be introduced if the operator is prevented from exercising manual control. This is an open item.~~

7.3.3.15 Power Lockout for Motor-Operated Valves

Certain motor-operated valves, such as those for cold-leg accumulator isolation, require power lockout (removal) to meet the single-failure criterion. The power lockout scheme used by the applicant uses an additional, manually controlled (via removable banana plugs) contactor. The staff has concluded that a short or relay failure in this circuitry could constitute a nondetectable failure and thus violate the single-failure criterion. The staff has expressed this concern to the applicant and considers this item open subject to its review of the applicant's pending response.

~~7.3.4 Conclusion~~

~~Later.~~

~~7.4 Systems Required for Safe Shutdown~~

~~7.4.1 Description~~

~~This section describes the equipment and associated controls and instrumentation of systems required for safe shutdown. It also describes controls and instrumentation outside the main control room that enable safe shutdown of the plant in case the main control room must be evacuated.~~

~~7.4.1.1 Safe Shutdown Systems~~

~~Securing and maintaining the plant in a safe shutdown condition can be done by appropriate alignment of selected systems that normally serve a variety of operational functions. The functions that the systems required for safe shutdown must provide are~~

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June 15, 1984

United States Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Mr. Darrell G. Eisenhut, Director
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Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Identification of Backfit Requirement Number 22

Gentlemen:

In a letter to Duquesne Light Company (DLC), dated May 14, 1984, the NRC transmitted the Auxiliary Systems Branch sections of the Beaver Valley Power Station Unit 2 (BVPS-2) draft SER. Enclosure 1 to the referenced letter identified the fuel pool maximum heat loads as Open Item No. 134.

The BVPS-2 fuel pool cooling system has been designed and evaluated in accordance with NUREG 0800, Rev. 1, Section 9.1.3 and BTP ASB 9-2. The attached pages from the draft SER note that the BVPS-2 FSAR included evaluation of the fuel pool cooling system for a defined normal and a defined abnormal heat load. The defined normal and abnormal heat loads are precisely those specified in SRP Section 9.1.3. However, the draft SER states that the NRC considers the normal and abnormal heat loads to be different from those in the SRP. Further, the draft SER states that the NRC will require DLC to demonstrate that the fuel pool cooling systems meet the temperature criteria of SRP Section 9.1.3 but with these newly defined heat loads which have no basis in the SRP.

Since there appears to be no regulatory basis for this new requirement, the controls of 10CFR50.109, GNLR 84-08, and NRC Manual Chapter 0514 identify the requirement as a backfit.

DLC requests that the proposed requirement be submitted to NRC management for approval, in accordance with the Office of Nuclear Reactor Regulation (NRR) procedure for management of plant specific backfitting, prior to transmittal as a licensing requirement.

DUQUESNE LIGHT COMPANY

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Mr. M. Licitra, Project Manager (w/a)
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Group C and seismic Category I requirements, as is the reactor plant component cooling water system. The cleanup system piping, valves, and filters comply with Quality Group D and nonseismic requirements. Its failure will not affect safety related equipment. Thus, the requirements of General Design Criterion 2, "Design Bases for Protection Against Natural Phenomena," and the guidelines of Regulatory Guide 1.13 Positions C.1 and C.2, "Spent Fuel Storage Facility Design Bases," 1.26 Position C.2, "Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants," and 1.29 Positions C.1 and C.2, "Seismic Design Classification" are satisfied.

The BVPS-2 spent fuel pool cooling and cleanup system is not shared with BVPS-1, thus, the requirements of General Design Criterion 5, "Sharing of Structures, Systems and Components," are not applicable.

Provisions have been made for routine visual inspection of the fuel pool cooling system components and instruments. The cooling pumps are normally operating and thus periodic testing is not required. Thus, the requirements of General Design Criteria 45, "Inspection of Cooling Water System," and 46, "Testing of Cooling water System," are satisfied.

[The applicant stated that the fuel pool heat loads have been calculated in accordance with Branch Technical Position ASB 9-2. The applicant states that under the normal heat-load (defined below), the pool temperature would be maintained below 140°F assuming the failure of one cooling train. This heat load is been defined as one-third core after 150 hours of decay, one-third core with one year of decay plus one-third core with 400 days decay. We consider the maximum normal heat load to be that which would exist when the pool is completely filled with successive normal refueling batch discharges. We will require the applicant to demonstrate that the spent fuel pool cooling system is capable of maintaining the pool water temperature at or below 140°F when the storage pool is completely filled with normal discharges assuming that one cooling train has failed.]

[The maximum abnormal heat load is defined by the applicant as one full core discharge with 150 hours of decay plus one third core discharge with 36 days decay and one third core with 400 days decay. With this heat load, the applicant stated that the pool temperature is maintained at or below 165°F. We consider the maximum abnormal heat load as one full core discharge plus all other fuel storage cells in the storage pool filled with successive normal refueling batch discharges. We will require the applicant to demonstrate that the spent fuel pool cooling system is capable of maintaining the pool water temperature below boiling when the pool contains a full core discharge and all other storage spaces are filled with normal discharges. We therefore cannot conclude that the requirements of General Design Criterion 44 "Cooling Water" are satisfied.]

No connections are provided to the spent fuel pool that may cause the pool water to be lowered below 10 feet above the top of the stored fuel thereby assuring adequate shielding for the fuel. The design does not allow any piping to terminate below this elevation, and therefore, the water level in the pool cannot be decreased below the top of the fuel stored in the spent fuel storage racks. Normal makeup to the fuel pool is provided from the primary grade water system (see SER Section 9.2.8) or as a backup from the seismic Category I service water system. An additional emergency source of makeup water is available from the fire protection system. In order to prevent contamination of the pool water during normal operation, a spool piece must be installed when utilizing the service water line. Blind flanges are normally installed at the connections to the service water system. Thus, the requirements of General Design Criterion 61, "Fuel Storage and Handling and Radioactivity Control," and the guidelines of Regulatory Guide 1.13, concerning fuel pool design are satisified.

The system incorporates control room alarmed pool water high and low level, pool water high temperature, cooling pump low discharge pressure, fuel pool cooling pump auto trip, refueling cavity water low level, and building radiation level monitoring systems, thus satisfying the requirements of General Design Criterion 63, "Monitoring Fuel and Waste Storage."

Except as

[Based on our review, ~~Aside from the items~~ noted above, we conclude that the spent fuel pool cooling and cleanup system is in conformance with the require-

~~ments of~~ General Design Criteria 2, 4, 44, 45, 46, 61, and 63~~, and the guide-~~ ~~lines of Regulatory Guides 1.26, 1.29 and BTP ASB~~ 9-2 with respect to protection against ~~natural~~ phenomena, missiles, inservice ~~inspection~~, functional test~~ing, radiation protection, performance monitoring, system design, quality group, seismic classification~~. The spent fuel pool cooling system does not meet the acceptance criteria of SRP Section 9.1.3. We will report resolution of our concerns in a supplement to this SER.]

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June 25, 1984

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ATTENTION: Mr. Darrell G. Eisenhut, Director
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Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Identification of Backfit Requirement Number 15

Gentlemen:

In a letter to Duquesne Light Company (DLC) dated September 19, 1983, the NRC transmitted the Power Systems Branch, Mechanical Section questions resulting from review of the Beaver Valley Power Station Unit 2 (BVPS-2) FSAR. Questions 430.66 and 430.68, which were attached to that letter, cited SRP Sections 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, and 9.5.8 and directed DLC to modify BVPS-2 design to provide Class 1E power to lighting and communications systems.

None of the SRP sections cited discuss communications systems. In addition, the SRP 9.5.3 acceptance criteria section states, "The emergency lighting system(s) is acceptable if the integrated design of the system(s) will provide adequate emergency station lighting in all areas, from onsite power sources, required for fire fighting, control, and maintenance of safety-related equipment, and the access routes to and from these areas."

Since these SRP sections do not address communications systems power sources and since BVPS-2 design includes onsite power sources while SRP 9.5.3 does not state that the onsite power sources must be Class 1E, the requirement that DLC provide 1E power to lighting and communications systems is a new interpretation of the SRP and the controls of 10CFR 50.109, GNLR 84-08, and NRC Manual Chapter 0514 identify the requirement as a backfit.

DLC requests that the proposed requirement be submitted to NRC management for approval, in accordance with the Office of Nuclear Reactor Regulation (NRR) procedure for management of plant specific backfitting, prior to transmittal as a licensing requirement.

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June 25, 1984

United States Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Mr. Darrell C Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Identification of Backfit Requirement Number 2

Gentlemen:

In a letter to Duquesne Light Company (DLC) dated September 19, 1983, the NRC transmitted the Power Systems Branch, Mechanical Section questions resulting from review of the Beaver Valley Power Station Unit 2 (BVPS-2) FSAR. Question 430.119, which was attached to that letter, cited SRP 9.5.7 and directed DLC to "provide a low level alarm for the rocker arm lube oil resevoir" on the emergency diesel generators.

SRP 9.5.7 indicates that the reviewer may select and emphasize material from this SRP section as may be appropriate for a particular case and includes the review of P&ID's for temperature, pressure, and level sensors which alert the operator when these parameters exceed the ranges recommended by the engine manufacturer. The acceptance criteria section of the SRP, while not providing any specific criteria for this item, states, "an additional basis for the acceptability of the system will be the degree of similarity with systems in previously reviewed plants with satisfactory operating experience."

Since the BVPS-2 design incorporates a low pressure alarm which would result in similar operator action and since this is a standard design of the engine manufacturer which has been accepted by the NRC for many plants now in operation, the requirement that DLC install a low level alarm is a new interpretation of the SRP and the controls of 10CFR50.109, GNLR 84-08, and NRC Manual Chapter 0514 identify the requirement as a backfit.

DLC requests that the proposed requirement be submitted to NRC management for approval, in accordance with the Office of Nuclear Reactor Regulation (NRR) procedure for management of plant specific backfitting, prior to transmittal as a licensing requirement.

DUQUESNE LIGHT COMPANY

By E. J. Woolever
E. J. Woolever
Vice President

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cc: Mr. H. R. Denton
Mr. G. W. Knighton, Chief
Ms. M. Ley, Project Manager
Mr. E. A. Licitra, Project Manager
Mr. G. Walton, NRC Resident Inspector

ATTACHMENT A

~~The staff has reviewed the material presented by the applicant in accordance with procedures in SRP 2.4.2. Based on this review, the staff concludes that there are no other credible sources of potential flooding of the plant site.~~

2.4.2.3 Effects of Intense Local Precipitation

Site drainage includes hillside drainage to the south of the plant and Peggs Run that parallels the highway road fill just east of the plant between the highway and the cooling tower area. To prevent flooding from hillside drainage, the plant has a storm drainage system which is designed for a rainfall intensity of 4 inches per hour. This is less than the probable maximum precipitation (PMP) so during a PMP event, some water could pond on the site.

PMP is the estimated depth of precipitation (rainfall) for which there is virtually no risk of exceeding. The PMP values used by the applicant to estimate the depth of local flooding, were determined from Hydrometeorological Report 33 (U.S. Weather Bureau 1956) and Engineering Manual, EM1110021411 (U.S. Army Corps of Engineers 1952). These rainfall values were as follows:

Duration (hours)	PMP (inches)
0.25	4.3
1	9.3
2	13.0
3	16.5
6	24.6
24	31.3

Using these PMP values, the applicant determined that maximum flood levels would remain 0.13 feet, 0.10 feet and 35.6 feet below the lowest access openings to the control building, the radwaste building, and the reactor building, respectively. It is not clear to the staff if these are the only safety-related buildings that could potentially be affected by flooding; therefore, a question has been submitted to the applicant and the staff is awaiting a response.

The staff has reviewed the information provided by the applicant in accordance with procedures described in SRP 2.4.2 and 2.4.3. The staff used Hydrometeorological Reports 51 and 52 (U.S. National Weather Service, 1978 and 1982) in its PMP determinations. These reports update and supersede Hydrometeorological Report 33 and EM 1110021411 which were used by the applicant. The staff concludes that the PMP amounts determined by the applicant are not conservative. In addition, the applicant has not provided sufficient information to support its conclusion that local floods will not enter safety-related buildings. The staff has submitted questions to the applicant and will complete its review pending responses by the applicant. The staff cannot conclude at this time that the plant meets the requirements of GDC 2 with respect to flooding from local intense precipitation.

Peggs Run is constricted in a deeply incised channel between the highway embankment and the cooling tower area at elevations as low as about 670 feet above msl. Construction of the plant required that a portion of Peggs Run be enclosed in a 15-foot diameter culvert so that the plant fill area could be extended across the Run. Location of the culvert is shown on Figure 2.2. The culvert empties into an open channel before entering the Ohio River. In analyzing the flood effects of a PMP event occurring over the Peggs Run drainage area, the applicant assumed that the 15-foot culvert was blocked. The applicant concluded that water levels in the vicinity of safety-related structures, due to flooding from Peggs Run, would be below the minimum station grade elevation of 730 feet-4 inches msl.

The staff has reviewed the material presented in the FSAR and concludes that the applicant has not provided sufficient information to support its conclusion that flooding from Peggs Run will not affect safety-related buildings. The staff will complete its review following receipt, from the applicant, of responses to staff questions concerning flooding on Peggs Run.

The effects of local intense precipitation on roofs of safety-related buildings has not been addressed in the material provided by the applicant. The staff will thus require that the applicant demonstrate and provide the basis for the ability of safety-related structures to withstand the accumulation of the PMP in the event that roof drains are blocked. All safety-related structures having roofs with parapets should be identified and the heights of parapets should be given. In addition, the criteria for the size, number and location of scuppers in those parapets should be provided. HMR 51 and HMR 52 should be used in this determination.

2.4.3 Probable Maximum Flood on Streams and Rivers

The probable maximum flood (PMF) is defined as the hypothetical precipitation-induced flood that is considered to be the most severe reasonably possible.

A PMF estimate for the Ohio River was developed by the U.S. Army Corps of Engineers, Pittsburgh District (1970). This PMF was reviewed by the staff during the CP stage and again during the Unit 1 OL review. The staff concluded that the PMF as developed by the Corps of Engineers was acceptable. The PMF was estimated to produce a peak discharge of 1,500,000 cfs and a maximum still water level of 730 feet msl. The finished station grade elevation varies from 730 feet-4 inches msl to 735 feet msl except along the river where the intake structure is located. In this area, the grade elevation is about 675 feet msl. The applicant states that entrances to the reactor building, the control building and the radwaste building are located above minimum local plant grade (730 feet 4 inches msl); the lowest being at an elevation of 730 feet-8 inches. The intake structure which is located at elevation 675 ft msl is equipped with flood doors. As discussed in Section 2.4.2.3, it is not clear to the staff if these are the only safety-related structures that potentially could be affected by flooding; therefore, the staff has submitted a question to the applicant and is awaiting a response.

Although the PMF level at elevation 730 feet msl is below entrances to safety-related structures identified by the applicant, winds blowing across the water may generate waves which could runup against the intake structure which is located close to the river. The applicant determined that coincident windwave activity could result in 5-foot high waves that would runup about 6.7 feet above the still water level of 730 feet msl at the intake structure. In the analysis of the required flood protection for the additional windwave increment, the applicant determined that the wave action would not exceed the structural design

Revision 1
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U.S. NUCLEAR REGULATORY COMMISSION

REGULATORY GUIDE

OFFICE OF STANDARDS DEVELOPMENT

REGULATORY GUIDE 1.9

SELECTION, DESIGN, AND QUALIFICATION OF DIESEL-GENERATOR UNITS USED AS ONSITE ELECTRIC POWER SYSTEMS AT NUCLEAR POWER PLANTS

A. INTRODUCTION

General Design Criterion 17, "Electric Power Systems," of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," includes a requirement that the onsite electric power system have sufficient capacity and capability to ensure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

Criterion III, "Design Control," of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50 includes a requirement that measures be provided for verifying or checking the adequacy of design by design reviews, by the use of alternative or simplified calculational methods, or by the performance of a suitable testing program.

Diesel-generator units have been widely used as the power source for the onsite electric power systems. This regulatory guide describes a method acceptable to the NRC staff for complying with the Commission's requirements that diesel-generator units intended for use as onsite power sources in nuclear power plants be selected with sufficient capacity and be qualified for this service.

*The substantial number of changes in this revision has made it impractical to indicate the changes with lines in the margin.

[1]Copies may be obtained from the Institute of Electrical and Electronics Engineers, Inc., United Engineering Center, 345 East 47th Street, New York, New York 10017.

B. DISCUSSION

A diesel-generator unit selected for use in an onsite electric power system should have the capability to (1) start and accelerate a number of large motor loads in rapid succession and be able to sustain the loss of all or any part of such loads and maintain voltage and frequency within acceptable limits and (2) supply power continuously to the equipment needed to maintain the plant in a safe condition if an extended loss of offsite power occurs.

IEEE Std 387-1977, "IEEE Standard Criteria for Diesel-Generator Units Applied as Standby Power Supplies for Nuclear Power Generating Stations,"[1] delineates principal design criteria and qualification testing requirements that, if followed, will help ensure that selected diesel-generator units meet their performance and reliability requirements. IEEE Std 387-1977 was developed by Working Group 4.2C of the Nuclear Power Engineering Committee (NPEC) of the Institute of Electrical and Electronics Engineers, Inc. (IEEE), approved by NPEC, and subsequently approved by the IEEE Standards Board on September 9, 1976. IEEE Std 387-1977 is supplementary to IEEE Std 308-1974, "IEEE Standard Criteria for Class 1E Power Systems and Nuclear Power Generating Stations,"[1] and specifically amplifies paragraph 5.2.4, "Standby Power Supplies," of that document with respect to the application of diesel-generator units. IEEE Std 308-1974 is endorsed with certain exceptions, by Regulatory Guide 1.32, "Criteria for Safety-Related Electric Power Systems for Nuclear Power Plants."

A knowledge of the characteristics of each load is essential in establishing the bases for

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the selection of a diesel-generator unit that is able to accept large loads in rapid succession. The majority of the emergency loads are large induction motors. This type of motor draws, at full voltage, a starting current five to ten times its rated load current. The sudden large increases in current drawn from the diesel generator resulting from the startup of induction motors can result in substantial voltage reductions. The lower voltage could prevent a motor from starting, i.e., accelerating its load to rated speed in the required time, or cause a running motor to coast down or stall. Other loads might be lost if their contactors drop out. Recovery from the transient caused by starting large motors or from the loss of a large load could cause diesel engine overspeed which, if excessive, might result in a trip of the engine. These same consequences can also result from the cumulative effect of a sequence of more moderate transients if the system is not permitted to recover sufficiently between successive steps in a loading sequence.

Generally it has been industry practice to specify a maximum voltage reduction of 10 to 15 percent when starting large motors from large-capacity power systems and a voltage reduction of 20 to 30 percent when starting these motors from limited-capacity power sources such as diesel-generator units. Large induction motors can achieve rated speed in less than 5 seconds when powered from adequately sized diesel-generator units that are capable of restoring the voltage to 90 percent of nominal in about 1 second.

Protection of the diesel-generator unit from excessive overspeed, which can result from a loss of load, is afforded by the immediate operation of a diesel-generator unit trip, usually set at 115 percent of nominal speed. In addition, the generator differential trip must operate immediately in order to prevent substantial damage to the generator. There are other protective trips provided to protect the diesel-generator units from possible damage or degradation. However, these trips could interfere with the successful functioning of the unit when it is most needed, i.e., during accident conditions. Experience has shown that there have been numerous occasions when these trips have needlessly shut down diesel-generator units because of spurious operation of a trip circuit. Consequently, it is important that measures be taken to ensure that spurious actuation of these other protective trips does not prevent the diesel-generator unit from performing its function.

The uncertainties inherent in estimates of safety loads at the construction permit stage of design are sometimes of such magnitude that it is prudent to provide a substantial margin in selecting the load capabilities of the diesel-generator unit. This margin can be provided by estimating the loads conservatively and selecting the continuous rating of the diesel-generator unit so that it exceeds the sum of the loads needed at any one time. A more accurate estimate of safety loads is possible during the operating license stage of review because detailed designs have been completed and preoperational test data are available. This permits the consideration of a somewhat less conservative approach, such as operation with safety loads within the short-time rating of the diesel-generator unit.

C. REGULATORY POSITION

Conformance with the requirements of IEEE Std 387-1977, "IEEE Standard Criteria for Diesel-Generator Units Applied as Standby Power Supplies for Nuclear Power Generating Stations," dated June 17, 1977, is acceptable for meeting the requirements of the principal design criteria and qualification testing of diesel-generator units used as onsite electric power systems for nuclear power plants subject to the following:

1. When the characteristics of loads are not accurately known, such as during the construction permit stage of design, each diesel-generator unit of an onsite power supply system should be selected to have a continuous load rating (as defined in Section 3.7.1 of IEEE Std 387-1977) equal to or greater than the sum of the conservatively estimated loads needed to be powered by that unit at any one time. In the absence of fully substantiated performance characteristics for mechanical equipment such as pumps, the electric motor drive ratings should be calculated using conservative estimates of these characteristics, e.g., pump runout conditions and motor efficiencies of 90% or less.

2. At the operating license stage of review, the predicted loads should not exceed the short-time rating (as defined in Section 3.7.2 of IEEE Std 387-1977) of the diesel-generator unit.

3. During preoperational testing, the predicted loads should be verified by tests.

4. In Section 5.1.1, "General," of IEEE Std 387-1977, the requirements of IEEE Std 308-1974 should be used subject to the regulatory position of Regulatory Guide 1.32.

5. Section 5.1.2, "Mechanical and Electrical Capabilities," of IEEE Std 387-1977 should be supplemented with the following:

"Each diesel-generator unit should be capable of starting and accelerating to rated speed, in the required sequence, all the needed engineered safety feature and emergency shutdown loads. At no time during the loading sequence should the frequency and voltage decrease to less than 95 percent of nominal and 75 percent of nominal, respectively. Frequency should be restored to within [illegible] percent of nominal, and voltage should be restored to within 10 percent of nominal within 60 percent of each load-sequence time interval. (A greater percentage of the time interval may be used if it can be justified by analysis. However, the load-sequence time interval should include sufficient margin to account for the accuracy and repeatability of the load-sequence timer.) During recovery from transients caused by step load increases or resulting from the disconnection of the largest single load, the speed of the diesel-generator unit should not exceed the nominal speed plus 75 percent of the difference between nominal speed and the overspeed trip setpoint or 115 percent of nominal, whichever is lower. Further, the transient following the complete loss of load should not cause the speed of the unit to attain the overspeed trip setpoint."

6. In Section 5.4, "Qualification," of IEEE Std 387-1977, the qualification testing requirements of IEEE Std 323-1974, "IEEE Standard for Qualifying Class IE Equipment for Nuclear Power Generating Stations,"[1] should be used subject to the regulatory position of Regulatory Guide 1.89, "Qualification of Class IE Equipment for Nuclear Power Plants."

7. Section 5.5, "Design and Application Considerations," of IEEE Std 387-1977 should be supplemented with the following:

"Diesel-generator units should be designed to be testable during operation of the nuclear power plant as well as while the plant is shut down. The design should include provisions so that the testing of the units will simulate the parameters of operation (outlined in Regulatory Guide 1.108, "Periodic Testing of Diesel-Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants") that would be expected if actual demand were to be placed on the system.

"Testability should be considered in the selection and location of instrumentation sensors and critical components (e.g., governor, starting system components), and the overall design should include status indication and alarm features. Instrumentation sensors should be readily accessible and designed so that their inspection and calibration can be verified in place."

8. Section 5.6.2.2, "Automatic Control," of IEEE Std 387-1977 should be supplemented with the following:

(3) "With the exception of the engine overspeed trip and the generator differential trip, all diesel-generator protective trips should be either (1) implemented with two or more independent measurements for each trip parameter with coincident logic provisions for trip actuation or (2) automatically bypassed during accident conditions. The design of the bypass circuitry should satisfy the requirements of IEEE Std 279-1971 at the diesel-generator system level and should include the capability for (1) testing the status and operability of the bypass circuits, (2) alarming in the control room abnormal values of all bypass parameters, and (3) manually resetting of the trip bypass function. (Capability for automatic reset is not acceptable.)"

9. Section 5.6.3.1, "Surveillance Systems," of IEEE Std 387-1977 should be supplemented with the following:

"In order to facilitate trouble diagnosis, the surveillance system should indicate which of the diesel-generator protective trips is activated first."

10. In Section 6.3, "Type Qualification Testing Procedures and Methods," of IEEE Std 387-1977, the requirements of IEEE Std 344-1975, "Recommended Practices for Seismic Qualification of Class IE Equipment for Nuclear Power Generating Stations," for seismic analysis or seismic testing by equipment manufacturers should be used subject to the regulatory position of Regulatory Guide 1.100, "Seismic Qualification of Electric Equipment for Nuclear Power Plants."

11. The option indicated by "may" in Section 6.3.2(5)(c) of IEEE Std 387-1977 should be treated as a requirement.

12. Section 6.5, "Site Acceptance Testing," and Section 6.6, "Periodic Testing," of IEEE Std 387-1977 should be supplemented by Regulatory Guide 1.108.

13. Section 4, "Reference Standards," of IEEE Std 387-1977 lists additional applicable IEEE standards. The specific applicability or acceptability of these referenced standards has been or will be covered separately in other regulatory guides, where appropriate.

D. IMPLEMENTATION

This proposed guide has been released to encourage public participation in its development. Except in those cases in which an applicant proposes an acceptable alternative method for complying with specified portions of the Commission's regulations, the method to be described in the active guide reflecting public comments will be used in the evaluation of applications for construction permits docketed after the implementation date to be specified in the active guide. This implementation date will in no case be earlier than July 1979.

If an applicant wishes to use this draft guide in an application docketed prior to the implementation date, the pertinent portions of the application will be evaluated on the basis of this draft guide.

ATTACHMENT B