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SUBJECT: Requests Waiver of Compliance from Tech Spec 3.8.1.1.b
 requirements to have two operable diesel generators.

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AEP:NRG:1155

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
REQUEST FOR NRR WAIVER OF COMPLIANCE

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Attn: T. E. Murley

July 18, 1991

Dear Dr. Murley:

The purpose of this letter is to confirm the details of a report made to the NRC staff by Indiana Michigan Power personnel on July 18, 1991. As a result of this report, we hereby request a Waiver of Compliance from Technical Specification 3.8.1.1.b, the requirement to have two operable diesel generators. As we indicated, we believe, based on our engineering judgment, that the components will remain operable. However, since we have yet to identify sufficient objective evidence to substantiate this, we have conservatively called the diesel generators inoperable. The Waiver of Compliance is requested for thirty days from the date of this letter. The basis for this request is provided below.

1) Reason for Request

Technical Specification (T/S) 3.8.1.1.b for both Units 1 and 2 of the Cook Nuclear Plant requires that two diesel generators be operable during Modes 1 through 4. During a review of our electrical distribution system, we identified a low probability event, a tornado, which has the potential for requiring human intervention in order for the diesel generator to be considered operable. Although the diesel generator meets the T/S surveillance requirements, and would indeed operate for likely events, the need for human intervention makes the diesel generator's operability questionable for this single event.

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ADD 1

In the next 30 days we will develop temporary physical changes and/or administrative procedures to alleviate the concerns. We will continue an engineering analysis to verify the operability of the components in their as-found conditions.

Implementing the changes requires a time period that exceeds the time allowed by the action statement of the T/S. The time required to implement the changes is necessary to ensure that the changes receive the necessary reviews, that correct procedures for implementing the changes are prepared, and that the installation is adequately checked prior to declaring the system operable.

We are, therefore, requesting a waiver of compliance from T/S 3.8.1.1 with the proviso that the surveillance requirements associated with the T/S will continue to be met.

2) Circumstance Leading to the Request

During April 1991, we were conducting an EDSFI readiness review. The purpose of the review was to ensure that our documentation was in order for a forthcoming NRC EDSFI. One question raised during the review was whether documentation existed to support diesel generator operation during a tornado.

The specific items in question are the ventilation ductwork which supplies cooling air to the rooms in which the diesel generators are located, the intake silencer for the diesel generator combustion air, and the diesel generator exhaust piping.

In the highly unlikely event that a tornado passes over the Cook Nuclear Plant, the intake ductwork supplying the diesel generator room ventilation may be subjected to an unacceptable decrease in internal pressure. If the ventilation system is not running at the time the tornado passes, a damper in the line would be closed, effectively isolating the internal area of the ducting from the diesel generator room. Because the ducting passes through the diesel generator room and the room would not be vented, a differential pressure would be imposed across the ducting upstream of the damper (See Figure 1).

We have been unable to locate documentation which demonstrates the ability of the ductwork to survive the differential pressure associated with this tornado condition. Our preliminary assessment has concluded that duct collapse may be possible. A similar concern exists for the diesel generator combustion air intake silencer located inside the diesel generator room.

Additionally, the diesel generator is supplied with combustion air from the atmosphere and exhausts combustion gases to the atmosphere. Both the supply and exhaust piping have components which are located outside of the building. These components, exhaust silencers, intake filters and piping, could be exposed to high wind forces. Again, we have yet to locate documentation which demonstrates the ability of these components to withstand the forces associated with the wind loadings.

The current situation occurred as a result of an internal review; its origin can be traced to the evolution of the methods used to design components to withstand the effects of tornadoes.

The Cook Nuclear Plant was designed to accommodate tornadoes. In this regard, structures were designed to withstand tornado effects. The D/G exhaust silencer, combustion air intake and ventilation intake components are located such that structures provide a measure of shielding from tornado effects. We have reviewed the background information concerning the requirements for designing structures and components to withstand the effects of tornadoes, and we have found that the requirements for the Cook Nuclear Plant are not clear regarding component design. Thus, the mechanism which has been identified may not have been among those considered when the Cook Nuclear Plant was constructed. Until the question was raised during our internal EDSFI, we had no reason to suspect the lack of documentation.

3) Compensatory Actions

Actions have been initiated to alleviate the concerns associated with vacuum induced pressure differential across the ventilation ductwork and the combustion air intake silencer. An evaluation has led us to conclude that venting of the diesel generator room and the passages through which the ductwork pass will alleviate the pressure difference between the outside and inside of the ductwork and silencer.

This is being accomplished by:

1. Running the diesel generator room ventilation fans. This opens the damper which provides a path for pressure equalization.
2. Opening the doors to the diesel generator rooms. This also provides a path for venting the diesel generator room and equalizing the pressure.
3. Opening doors and manways in other compartments through which the ductwork passes. This opens these areas up to a vent path and reduces potential for pressure differential in these areas.

We have identified methods for modifying the outside structures to provide additional assurance that the wind forces generated by a tornado can be withstood. These are:

1. Using cables to provide additional support to the structure and,
2. Removing a portion of the ventilation intake which protrudes outside of the building.

These measures will either provide the necessary strength to resist the wind forces or remove the structure from the forces of the wind.

4) Evaluation of Safety Significance

At the time of this writing, the concerns regard lack of documentation. However, it is conceivable that the documentation will not be located, or that evaluation of the concerns will not demonstrate the ability of the appurtenances to survive tornadoes. This justification is intended to address these possibilities.

Our primary basis for concluding that this Temporary Waiver of Compliance will not result in significant impact on public health and safety is based on the low probability of tornadoes for the areas around the Cook Nuclear Plant. Preliminary results from the Donald C. Cook Nuclear Plant Probabilistic Risk Assessment (PRA) indicate that tornadoes resulting in 90 mph winds occur with a frequency of $2.0E-04$ per year for the 125-mile radius around the plant. (In comparison, tornadoes resulting in 360 mph winds occur with a frequency of $8.5E-08$ per year.) The PRA results also indicate that the majority of the tornadoes within a 125-mile radius of Bridgman, Michigan, have occurred in the months of April, May and June, and that the occurrence of tornadoes declines after June. Thus, the likelihood of such a tornado at Cook Nuclear Plant during the month of July (and each following month until April) is even less than $2.0E-04$. When the probability that the tornado causes both a loss-of-offsite power and loss-of-the-diesel generators is included, this low probability is reduced even further.

5) Justification for Duration of the Request

The 30 days requested will allow us time to implement the changes in an orderly fashion. This will enable us to verify the acceptability of the changes, perform adequate reviews of the changes, and prepare installation procedures.

6) No Significant Hazards Consideration

10 CFR 50.92 provides guidance concerning the determination of significant hazards. The criteria to be evaluated and our responses are given below:

Criterion 1

Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

The changes to be implemented during the waiver period will enhance safety by correcting any deficiencies in design that are conservatively postulated to exist. The timeframe involved (30 days) is very small. The already low probability ($2.0E-04$) of a tornado touchdown in the Cook Nuclear Plant vicinity per year is then further reduced because of this small time frame compared to one year. Further, just because a tornado is present does not automatically mean loss of all offsite or onsite power supplies. Thus, the probability of a station blackout event is reduced further. Therefore, we believe there would be no significant increase in the probability of an accident.

Criterion 2

Does the change create the possibility of a new or different kind of accident from any previously evaluated?

This temporary waiver letter requests relief from the requirement to have operable diesel generators for a relatively brief period of time to enable us to implement changes in an orderly fashion. The changes themselves will be performed under the provisions of 10 CFR 50.59, and will enhance our ability to cope with a tornado. As part of the 10 CFR 50.59 process the changes will be reviewed to ensure they do not create the possibility of a new or different kind of accident from any previously evaluated. As discussed above, the probability of a tornado striking the Cook Nuclear Plant and completely blacking out the station is extremely small. Based on this low probability, we believe that the brief period of time the Cook Nuclear Plant will be allowed to operate out of compliance with the Technical Specifications requirements will not create the possibility of a new or different kind of accident from any previously evaluated.

Criterion 3

Does the change involve a significant reduction in a margin of safety?

The concern is station blackout caused by a tornado. We have demonstrated that the probability of a tornado striking the region around the Cook Nuclear Plant is, in general, very small. The already low probability becomes extremely small when consideration is given to the chance of the tornado striking the plant, and more specifically, causing complete loss-of-offsite power and both EDGs per unit. The changes to be implemented in the next 30 days will actually increase the margin of safety.

Based on these considerations, we conclude that the Temporary Waiver of Compliance will not result in a significant reduction in a margin of safety.

7) Basis to Show That This Request Does Not Involve Irreversible Environmental Consequences

This request does not involve a change in the installation or use of the facilities or components located within the restricted areas as defined in 10 CFR 20. We have determined that this Temporary Waiver of Compliance involves no significant change in the types of effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. Accordingly, this Temporary Waiver of Compliance meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the Temporary Waiver of Compliance.

This request for a NRR Waiver of Compliance has been reviewed and approved by AEPSC senior management in addition to the on-site review conducted in accordance with AEPSC procedures.

Should action on this request be delayed or denied, we request the NRC to notify us immediately of approval to shutdown sequentially the units with a 48 hour delay between the Unit 1 and Unit 2 shutdown. This request is being made to prevent complications which could arise in trying simultaneously to shutdown both units.

Dr. T. E. Murley

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This document has been prepared following Corporate procedures that incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Sincerely,



E. E. Fitzpatrick
Vice President

ldp

cc: D. H. Williams, Jr.
A. A. Blind - Bridgman
J. R. Padgett
G. Charnoff
A. B. Davis - Region III
NRC Resident Inspector - Bridgman
NFEM Section Chief
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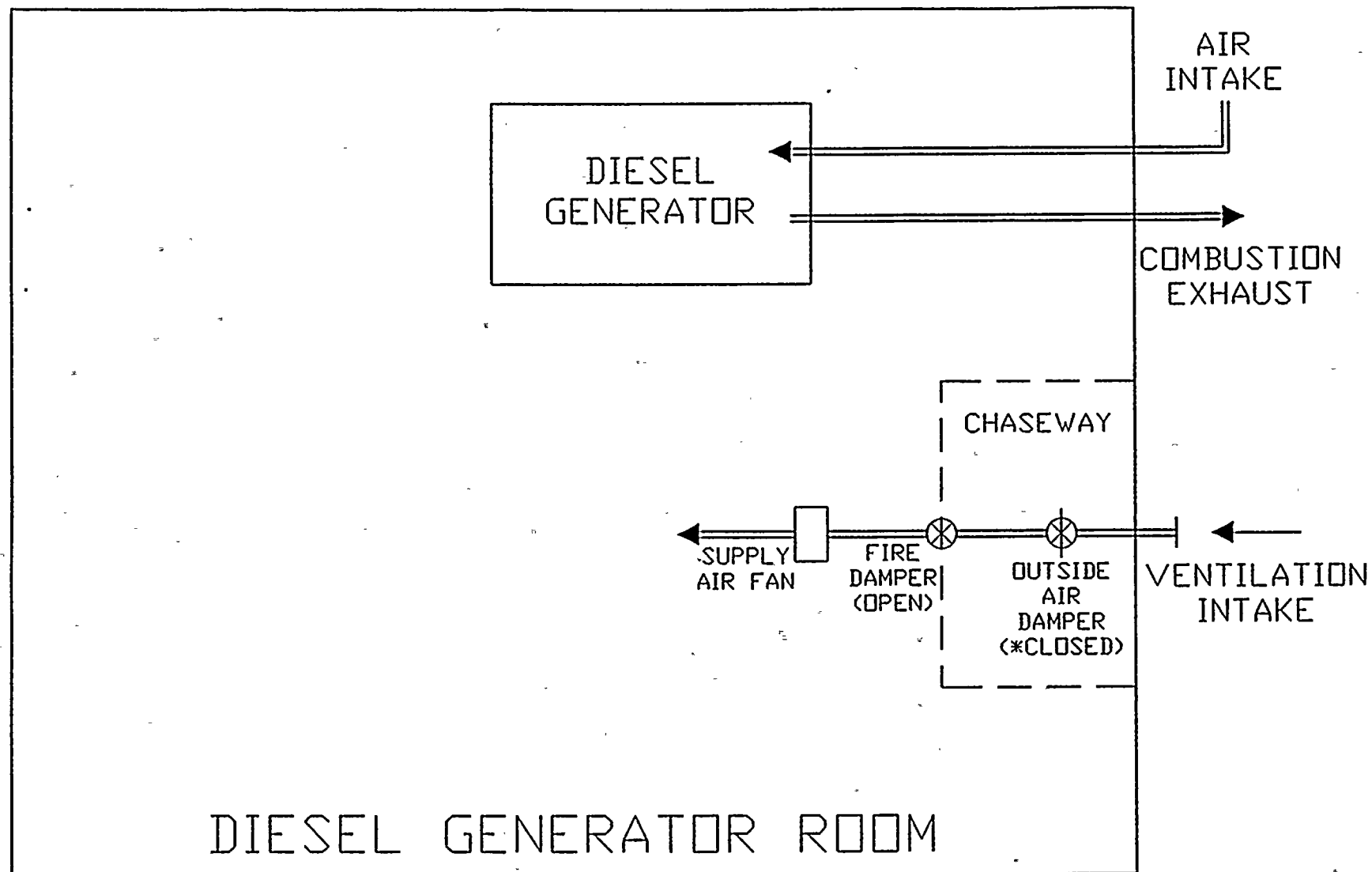


FIGURE 1
SIMPLIFIED SCHEMATIC

* DAMPER IS INTERLOCKED
WITH FAN. DAMPER IS
CLOSED WHEN FAN IS
NOT OPERATING.

