

ATTACHMENT I TO IPN-98-044

PROPOSED TECHNICAL SPECIFICATION CHANGES REGARDING  
EMERGENCY DIESEL GENERATOR TESTING

NEW YORK POWER AUTHORITY  
INDIAN POINT 3 NUCLEAR POWER PLANT  
DOCKET NO. 50-286  
DPR-64

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and is in addition to the fuel requirements for other nuclear units on the site.

6. Three batteries plus three chargers and the D.C. distribution systems operable.
  7. No more than one 120 volt A.C. Instrument Bus on the backup power supply.
- B. The requirements of 3.7.A may be modified to allow any one of the following power supplies to be inoperable at any one time.
1. One diesel or any diesel fuel oil system or a diesel and its associated fuel oil system may be inoperable for up to 72 hours provided the 138 KV and the 13.8 KV sources of offsite power are available, and the engineered safety features associated with the remaining diesel generator buses are operable. If the inoperable diesel generator became inoperable due to any cause other than preplanned maintenance or testing, then within 24 hours, either:
    - a. Determine by evaluation, that the remaining operable diesel generators are not inoperable due to common-cause failure.
- OR
- b. Verify by testing, that the remaining diesel generators are operable.
2. The 138 KV or the 13.8 KV sources of power may be inoperable for 48 hours provided the three diesel generators are operable. This operation may be extended beyond 48 hours provided the failure is reported to the NRC within the 48 hour period with an outline of the plans for restoration of offsite power and NRC approval is granted.

The bus arrangements specified for operation ensure that power is available to an adequate number of safeguards auxiliaries. With additional switching, more equipment could be out of service without infringing on safety.

Two diesel generators have sufficient capacity to start and run within design load the minimum required engineered safeguards equipment.<sup>(1)</sup> The minimum onsite underground stored diesel fuel oil inventory is maintained at all times to assure the operation of two diesels carrying the minimum required engineered safeguards equipment load for at least 48 hours.<sup>(2)</sup> The minimum required storage tank volume (when above cold shutdown) of 6671 gallons is the minimum volume required when sounding the tanks to obtain level information. This volume includes allowances for fuel not usable due to the oil transfer pump cutoff switch (760 gallons) and a safety margin (20 gallons). If the installed level indicators are used to measure tank volume, 6721 gallons of oil (6671 gallons plus the 50 gallon uncertainty associated with the level indicators) must be in each storage tank.

When in cold shutdown, two diesel generators must be operable with a total underground storage of 6671 gallons of fuel oil. The same methodology used to measure fuel volume above cold shutdown should be used. Additional fuel oil suitable for use in the diesel generators will be stored either on site or at the Buchanan Substation. The minimum storage of 30,026 gallons of additional fuel oil will assure continuous operation of two diesels at the minimum engineered safeguards load for a total of 7 days. A truck with hosing connections compatible with the underground diesel fuel oil storage tanks is available for transferal of diesel oil from storage areas either on site or at the Buchanan Substation. Commercial oil supplies and trucking facilities are also available.

Specification 3.7.B.1.a provides an allowance to avoid unnecessary testing of operable emergency diesel generators (EDG) upon discovery of an inoperable EDG (Reference 3). If it can be determined by evaluation that the cause of the inoperable EDG does not exist on the operable EDGs, the operability test for those EDGs does not have to be performed. If the cause of inoperability does exist on one or both of the other EDGs, the affected EDG(s) would be declared inoperable upon discovery and Specification 3.7.C would be entered. If the cause of the initial inoperable EDG cannot be confirmed not to exist on the remaining EDGs, performance of the surveillance test that starts the affected EDG(s) suffices to provide assurance of continued operability of those EDGs. If a diesel generator is out of service due to preplanned preventive maintenance or testing, special surveillance testing of the remaining diesel generators is not required because the required periodic surveillance testing suffices to provide assurance of their operability. The fact that preplanned corrective maintenance is sometimes performed in conjunction with preplanned maintenance or testing does not necessitate that the remaining diesels be tested, because this corrective maintenance is on defects or potential defects that never called diesel operability into question. If a diesel generator defect or operability concern is discovered while performing this preplanned preventive maintenance or testing, the concern or defect is evaluated to determine if the same concern or defect could render the remaining diesel generators inoperable.

Since the backup lighting supply is stripped on safety injection, the requirement that not more than one 120 volt A.C. instrument bus be energized from the backup lighting supply is to assure minimum operable containment spray actuation channels.

As a result of an investigation of the effect components that might become submerged following a LOCA may have on ECCS, containment isolation and other safety-related functions, a fuse and a locked open circuit breaker were provided on the electrical feeder to emergency lighting panel 318 inside containment. With the circuit breaker in the open position, containment electrical penetration H-70 is de-energized during the accident condition. Personnel access to containment may be required during power operation. Since it is highly improbable that a LOCA would occur during this short period of time, the circuit breaker may be closed during that time to provide emergency lighting inside containment for personnel safety.

When the 138 KV source of offsite power is out of service and the 13.8KV power source is being used to feed Buses 5 and 6, the automatic transfer of 6.9 KV Buses 1, 2, 3 and 4 to offsite power after a unit trip could result in overloading of the 20 MVA 13.8 KV/6.9 KV auto-transformer. Accordingly, the intent of specification 3.7.B.3 is to prevent the automatic transfer when only the 13.8 KV source of offsite power is available. However, this specification is not intended to preclude subsequent manual operations or bus transfers once sufficient loads have been stripped to assure that the 20 MVA auto-transformer will not be overloaded by these manual actions.

#### References

- 1) FSAR - Section 8.2.1
- 2) NYPA Calculation, IP3-CALC-EG-00217, Revision 3, dated May 25, 1994.
- 3) NRC Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," dated July 2, 1984.

ATTACHMENT II TO IPN-98-044

**SAFETY EVALUATION FOR  
PROPOSED TECHNICAL SPECIFICATION CHANGES REGARDING  
EMERGENCY DIESEL GENERATOR TESTING**

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## **Section I – Description of Changes**

This application for amendment to section 3.7.B.1 of the Indian Point 3 Technical Specifications proposes to modify a testing requirement for the emergency diesel generators (EDG). The proposed change is consistent with the Standard Technical Specifications (Reference 1) and is intended to reduce unnecessary EDG testing as recommended by Generic Letter 84-15 (Reference 2). The current specification requires that, whenever an EDG becomes inoperable for any reason other than preplanned preventive maintenance or testing, the remaining EDGs must be tested within 24 hours. The proposed change will allow an evaluation for potential common-cause failures to be used as an alternative to testing. Changes to the Technical Specification Basis are also proposed to explain this alternative.

Specification 3.7.B.1 currently states:

“ ... If the inoperable diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, the remaining diesel generators shall be tested within 24 hours.”

The proposed change is:

“ ... If the inoperable diesel generator became inoperable due to any cause other than preplanned maintenance or testing, then within 24 hours, either:

- a. Determine by evaluation, that the remaining operable diesel generators are not inoperable due to common-cause failure.

OR

- b. Verify by testing, that the remaining diesel generators are operable.”

## **Section II – Evaluation of Changes**

Generic Letter 84-15 discussed the importance of maintaining diesel generator reliability and identified proposed actions that could lead to reliability improvements. One area addressed by the generic letter was a reduction in the number of surveillance test engine starts that could result in premature diesel engine degradation. Originally the Indian Point 3 Technical Specifications required that testing of remaining operable diesels be performed daily if one diesel was found to be inoperable. The requirement was subsequently modified (Reference 3) to perform testing only once for each operable diesel and within 24 hours of identifying the inoperable diesel. The proposed change will further reduce potential diesel degradation induced by engine starts by allowing an evaluation of common-cause failure considerations consistent with the current Standard Technical Specifications. If an evaluation, conducted within 24 hours of finding an inoperable diesel, concludes that the remaining diesels are not inoperable due to a common-cause failure, then testing of those diesels is not required. If the evaluation does identify a common-cause failure, then one or both of the remaining affected diesels, as appropriate, must be declared inoperable and the specified required actions must be taken. If the evaluation is inconclusive regarding common-cause failure, then testing of the remaining diesels (within 24 hours of finding the inoperable diesel) suffices to provide assurance of continued operability of those diesels.

### **Section III – No Significant Hazards Evaluation**

Consistent with the criteria of 10 CFR 50.92, the proposed changes to the Technical Specifications are judged to involve no significant hazards based on the following information:

- (1) Does the proposed license amendment involve a significant increase in the probability or consequences of an accident previously analyzed?

Response:

No. The three Emergency Diesel Generators (EDG) at Indian Point 3 are designed to provide a source of power to support a safe and orderly plant shutdown in the event that all other normal and standby sources of power are not available, such as during a postulated Loss of Offsite Power (LOOP). The probability of such events occurring is not affected by the proposed amendment. Any two of the three EDGs are capable of supplying the minimum power requirements for emergency safeguards equipment that mitigate the consequences of postulated design basis accident conditions. Periodic preventive maintenance and surveillance testing are performed to provide assurance that the operability of all three EDGs is maintained. In the event that an inoperable EDG is identified, both the existing specification and the proposed change provide for actions that verify the operability of the remaining 2 EDGs. Operability of 2 EDGs ensures that sufficient emergency power is available, if needed, to mitigate the consequences of postulated accidents. Therefore, the proposed license amendment does not involve a significant increase in the probability or consequences of an accident previously analyzed.

- (2) Does the proposed license amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response:

No. The proposed license amendment does not involve any physical changes to plant systems or component setpoints. Also, there are no changes to the way in which systems or equipment are operated. The proposed change will continue to require that the operability of the remaining two EDGs be verified if one of the three EDGs is found to be inoperable. The proposed change to allow the use of a common cause failure evaluation, as an alternative to testing, to accomplish the operability verification can benefit overall EDG reliability by eliminating unnecessary EDG starts. Therefore, the proposed license amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

- (3) Does the proposed amendment involve a significant reduction in a margin of safety?

Response:

No. Important performance requirements for the EDGs include electrical output capacity, elapsed time to start and reach rated output, and fuel storage supply to support a minimum period of operation. The proposed amendment does not change

EDG performance requirements. The existing specification allows a period of 24 hours in which to verify the operability of the remaining 2 EDGs if one of the three EDGs is found inoperable. The proposed amendment does not change the 24-hour time limit. Operability verification, either by testing or evaluation, within 24 hours provides assurance that this source of emergency power is available if needed. Therefore, the proposed amendment does not involve a significant reduction in a margin of safety. Also, this verification method has been approved for use with the current Standard Technical Specifications.

#### **Section IV – Impact of Changes**

The proposed changes will not adversely affect the ALARA Program, the Security and Fire Protection Programs, or the Emergency Plan. This conclusion is based on the type of changes being made in comparison to the purpose, scope, and content of these programs. There are no physical changes required to plants systems, equipment or component setpoints. The proposed changes also do not affect the FSAR description (Reference 4) or the conclusions of the Safety Evaluation Report (Reference 5). Implementation of the proposed amendment will involve the use of the Authority's existing corrective action program (as implemented by Administrative Procedure AP-8, "Deviation & Event Reporting and Operability Determination") to perform and document common-cause failure evaluations. No changes to administrative procedures are required to implement this change.

#### **Section V - Conclusions**

The incorporation of these changes:

- a) will not significantly increase the probability nor the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report;
- b) will not create the possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report; and
- c) will not significantly reduce the margin of safety as defined in the bases for any Technical Specification.

Therefore, the proposed change involves no significant hazards considerations as defined in 10 CFR 50.92.

#### **Section VI - References**

1. NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Revision 1 dated April 1995.
2. NRC Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," dated July 2, 1984.

3. NRC letter, "Issuance of Amendment 132 for the Indian Point Nuclear Generating Unit No. 3," N. Conicella to R. Beedle, dated May 5, 1993.
4. Indian Point 3 Updated Final Safety Analysis Report, dated December 1997.
5. NRC Safety Evaluation Report for Indian Point 3 Nuclear Generating Station, dated September 21, 1973.

ATTACHMENT III TO IPN-98-044

**MARKUP OF PROPOSED TECHNICAL SPECIFICATION CHANGES  
REGARDING EMERGENCY DIESEL GENERATOR TESTING**

NOTE:

Deletions are shown in ~~strikeout~~ and additions are in **bold**.  
Previous amendment revision bars are not shown on these pages.

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~~Periodic diesel outages will be necessary to perform the corrective maintenance required as a result of previous tests or operations and the preventive maintenance recommended by the manufacturer. If a diesel generator is out of service due to preplanned maintenance or testing, special surveillance testing of the remaining diesel generators is not required because the required periodic surveillance testing suffices to provide assurance of their operability. The fact that preplanned corrective maintenance is sometimes performed in conjunction with **this preplanned** preventive maintenance or testing does not necessitate that the remaining diesels be tested, because this corrective maintenance is on defects or potential defects that never called diesel operability into question. If a diesel generator defect or operability concern is discovered while performing **this preplanned preventive** maintenance or testing, the concern or defect is evaluated to determine if the same concern or defect could render the remaining diesel generators inoperable. ~~Unless this evaluation determines that the potential for the defect or concern to effect the remaining diesel generators has been eliminated, performance of a surveillance test on each of the remaining diesel generators provides adequate assurance of their operability.~~~~

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Specification 3.7.B.1.a provides an allowance to avoid unnecessary testing of operable emergency diesel generators (EDG) upon discovery of an inoperable EDG (Reference 3). If it can be determined by evaluation that the cause of the inoperable EDG does not exist on the operable EDGs, the operability test for those EDGs does not have to be performed. If the cause of inoperability does exist on one or both of the other EDGs, the affected EDG(s) would be declared inoperable upon discovery and Specification 3.7.C would be entered. If the cause of the initial inoperable EDG cannot be confirmed not to exist on the remaining EDGs, performance of the surveillance test that starts the affected EDG(s) suffices to provide assurance of continued operability of those EDGs.

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When the 138 KV source of offsite power is out of service and the 13.8KV power source is being used to feed Buses 5 and 6, the automatic transfer of 6.9 KV Buses 1, 2, 3 and 4 to offsite power after a unit trip could result in overloading of the 20 MVA 13.8 KV/6.9 KV auto-transformer. Accordingly, the intent of specification 3.7.B.3 is to prevent the automatic transfer when only the 13.8 KV source of offsite power is available. However, this specification is not intended to preclude subsequent manual operations or bus transfers once sufficient loads have been stripped to assure that the 20 MVA auto-transformer will not be overloaded by these manual actions.

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- 1) FSAR - Section 8.2.1
- 2) NYPA Calculation, IP3-CALC-EG-00217, Revision 3, dated May 25, 1994.
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