3.7 AUXILIARY ELECTRICAL SYSTEMS

Applicability

Applies to the availability of electrical power for the operation of plant auxiliaries.

Objective

To define those conditions of electrical power availability necessary (1) to provide for safe reactor operation, and (2) to provide for the continuing availability of engineered safety features.

Specification

A. The reactor shall not be brought above the cold shutdown condition unless the following requirements are met:

1. Two physically independent transmission circuits to Buchanan Substation capable of supplying engineered safeguards loads.

2. 6.9 KV buses 5 and 6 energized from either 138 KV feeder 95331 or 95332.

3. Either 13.8 KV feeder 13W92 or 13W93 and its associated 13.8/6.9 KV transformer available to supply 6.9 KV power.

4. The four 480-volt buses 2A, 3A, 5A and 6A energized and the bus tie breakers between buses 5A and 2A, and between buses 3A and 6A, opened.

5. Three diesel generators operable with a minimum onsite supply of 6671 gallons of fuel in each of the three individual underground storage tanks. In addition to the underground storage tanks, 30,026 gallons of fuel compatible for operation with the diesels shall be available onsite or at the Buchanan substation. This 30,026 gallon reserve is for Indian Point Unit No. 3 usage only

Amendment No. 133,

4. Two operable diesel generators together with total underground storage containing a minimum of 6671 gallons of fuel.

G. When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered operable for the purpose of satisfying the requirements of its applicable specification provided: (1) its corresponding normal or emergency power source is operable; and (2) all of its redundant system(s), subsystem(s), train(s), components(s) and device(s) are operable or likewise satisfy the requirements of the specification.

Basis

The electrical system equipment is arranged so that no single contingency can inactivate enough safeguards equipment to jeopardize the plant safety. The 480-volt equipment is arranged on 4 buses. The 6900-volt equipment is supplied from 6 buses.

The Buchanan Substation has both 345 KV and 138 KV transmission circuits which are capable of supplying startup, normal operation, shutdown and/or engineered safeguards loads.

The 138 KV supplies or the gas turbines are capable of providing sufficient power for plant startup. Power via the station auxiliary transformer can supply all the required plant auxiliaries during normal operation, if required.

In addition to the unit transformer, four separate sources supply station service power to the plant.[1]

The plant auxiliary equipment is arranged electrically so that multiple items receive their power from different buses. Redundant valves are individually supplied from separate motor control centers.

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.[1] 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.[2] 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.

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 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 this 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.

ATTACHMENT II TO IPN-95-081

REVISED SAFETY EVALUATION OF TECHNICAL SPECIFICATION CHANGES ASSOCIATED WITH THE MINIMUM FUEL OIL REQUIRED FOR THE EMERGENCY DIESEL GENERATORS

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

SAFETY EVALUATION
RELATED TO
PROPOSED TECHNICAL SPECIFICATION CHANGES ASSOCIATED WITH THE MINIMUM FUEL OIL REQUIRED FOR THE EMERGENCY DIESEL GENERATORS

Section I - Description of Changes

This application for amendment to Section 3.7 of the Indian Point 3 Technical Specifications proposes to change the minimum amount of fuel oil required for each emergency diesel generator (EDG) fuel oil storage tank. This change is the result of a recent modification (Reference 1) which replaced the existing fuel oil indicators with more accurate ones.

Section II - Evaluation of Changes

The EDGs are each supplied with a 7700 gallon capacity fuel oil storage tank and an oil transfer pump. The 7700 gallons of oil can be divided into two zones of fuel; one zone which is available for use in the EDGs and one zone which must remain in the tank to protect the pump from the damaging effects of vortexing. The FSAR (Reference 2) states that each fuel oil storage tank must contain a minimum amount of usable oil. This requirement assures that sufficient fuel is available to run the diesels, and thus power the minimum safeguards equipment for 48 hours, assuming two EDGs are operable.

Section 3.7 of the Technical Specifications currently states that the reactor shall not be brought above cold shutdown unless 7056 gallons of fuel oil are in each EDG storage tank. This volume encompasses the fuel oil which is available for use (5891 gallons), the unusable fuel (760 gallons), the level indicator uncertainty ($\pm$ 385 gallons) and a safety margin (20 gallons). A modification (Reference 1) has recently been completed which installed replacement fuel oil level indicators. These new indicators have an uncertainty of $\pm$50 gallons (335 gallons less than the old indicators) and therefore reduce the amount of oil needed to compensate for level instrument inaccuracy by 335 gallons. Consequently, the minimum volume of fuel oil needed in each EDG storage tank, when using the level indicators to measure tank volume, decreases from 7056 gallons to 6721 gallons.

In order to simplify the Technical Specifications, this application proposes to replace the fuel oil requirement found in Section 3.7.A.5 with the requirement currently found in the Basis. This would place the amount of fuel oil needed when sounding the tanks (6671 gallons) in Section 3.7.A.5. The amount of fuel oil needed when using the installed level indicators (6721 gallons) and an explanation of the different methods of measuring tank volume have been placed in the Basis. This ensures Section 3.7.A.5 contains the minimum amount of fuel oil needed for the EDG storage tanks and that the FSAR requirement for minimum fuel oil is met.

Consistent with the discussion above, specification 3.7.F.4 is also being changed to require a total of 6671 gallons of fuel in the EDG fuel oil storage tanks.

Section III - No Significant Hazards Evaluation

Consistent with the criteria of 10 CFR 50.92, the enclosed application is 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:

The proposed changes do not involve a significant increase in the probability or consequences of an accident previously analyzed. This amendment application is the result of a modification which installed new fuel oil level indicators. These new indicators reduce the amount of measurement uncertainty by 335 gallons. The proposed reduction in minimum fuel oil corresponds to this reduction in uncertainty and therefore does not affect the amount of fuel oil available for use in the EDG storage tanks. The interchange of fuel oil values between Section 3.7.A.5 and the Basis simplifies the Technical Specifications and ensures that sufficient oil is present to power the minimum safeguards equipment for 48 hours, assuming two EDGs are operable.

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

Response:

The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated because they do not affect the way the plant operates. This amendment application is the result of a modification which installed new fuel oil level indicators which have a higher accuracy than the previous ones. The requested change in the minimum required fuel oil volume corresponds to this reduction in measurement uncertainty and does not affect the amount of oil available for use by the EDGs. The interchange of fuel oil values between Section 3.7.A.5 and the Basis simplifies the Technical Specifications and ensures that sufficient oil is present to power the minimum safeguards equipment for 48 hours, assuming two EDGs are operable.

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

Response:

The proposed changes do not involve a significant reduction in a margin of safety. This amendment application is the result of a modification which installed new fuel oil level indicators. These new indicators reduce the amount of measurement uncertainty by 335 gallons. The proposed reduction in minimum fuel oil corresponds to this reduction in uncertainty and therefore does not affect the amount of fuel oil available

for use in the EDG storage tanks. The interchange of fuel oil values between Section 3.7.A.5 and the Basis simplifies the Technical Specifications and ensures that sufficient oil is present to power the minimum safeguards equipment for 48 hours, assuming two EDGs are operable.

Section IV - Impact of Changes

These changes will not adversely affect the following:

ALARA Program
Security and Fire Protection Programs
Emergency Plan
FSAR or SER Conclusions
Overall Plant Operations and the Environment

Section V - Conclusions

The incorporation of these changes: a) will not increase the probability nor the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the Safety Analysis Report; b) will not increase the possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report; c) will not reduce the margin of safety as defined in the bases for any technical specification; d) does not constitute an unreviewed safety question; and e) involves no significant hazards considerations as defined in 10 CFR 50.92.

Section VI - References

1. NYPA Minor Modification, MMP 94-3-132 EDG, Revision 1, "EDG Fuel Oil Tank Level Indicator LI-1133, LI-1134 and LI-1135 Replacement."

2. FSAR, Section 8.2

ATTACHMENT III TO IPN-95-081

REVISED COMMITMENTS FOR THE SUPPLEMENT TO THE TECHNICAL SPECIFICATION CHANGES ASSOCIATED WITH THE MINIMUM FUEL OIL REQUIRED FOR THE EMERGENCY DIESEL GENERATORS

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

COMMITMENTS ASSOCIATED WITH IPN-95-081

Comm. No.	Commitment Description	Due Date
IPN-95-081-01 (Supersedes IPN-95-018-01)	A minimum onsite supply of 6671 gallons of fuel shall be in each EDG Fuel Oil Storage Tank, when above the cold shutdown condition.	30 days after NRC approval of amendment
IPN-95-081-02 (Supersedes IPN-95-018-02)	Total underground storage is required to contain a minimum of 6671 gallons of fuel under all conditions, including cold shutdown.	30 days after NRC approval of amendment