

PROPOSED CHANGE RTS-176
TO THE
DUANE ARNOLD ENERGY CENTER
TECHNICAL SPECIFICATIONS

The holders of license DPR-49 for the Duane Arnold Energy Center (DAEC) propose to amend Appendix A (Technical Specifications) to said license by deleting certain current pages and replacing them with the attached, new pages. A list of the affected pages is provided below.

The purpose of this proposed change to the Technical Specifications (TS) is to incorporate changes recommended in Generic Letter 83-30, "Deletion of Standard Technical Specification Surveillance Requirement 4.8.1.1.2.d.6 for Diesel Generator Testing," Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," and Information Notice 85-32, "Recent Engine Failures of Diesel Generators," into the DAEC Technical Specifications.

Generic Letter 83-30 provides guidance for revising diesel generator Surveillance Requirement 4.8.A.1.b in the DAEC Technical Specifications. The result of this change will be the deletion of a requirement for diesel generator load interruption, reconnection, and resequencing testing. The current TS Surveillance Requirement is not consistent with the provisions of GDC 17, Regulatory Guide 1.108, and NRC Standard Review Plans (SRPs 8.2 and 8.3.1). This change will correct this inconsistency.

Generic Letter 84-15 suggests changes to be made to help improve and maintain diesel generator reliability. This letter specifically recommended the deletion of all diesel generator testing requirements while subsystems of the Emergency Core Cooling System (ECCS) are inoperable.

In response to this, Iowa Electric proposes the following changes:

1. Surveillance Requirement 4.5.A.2 is revised to eliminate diesel generator testing when a core spray subsystem is declared inoperable.
2. Surveillance Requirement 4.5.A.4 is revised to eliminate diesel generator testing when one of the RHR (LPCI) pumps is declared inoperable.
3. Surveillance Requirement 4.5.A.5 is revised to eliminate diesel generator testing when two RHR (LPCI) pumps are declared inoperable.
4. Surveillance Requirement 4.5.C.3 is revised to eliminate diesel generator testing when one RHR Service Water pump in each subsystem is declared inoperable.
5. Surveillance Requirement 4.5.C.4 is revised to eliminate diesel generator testing when one RHR Service Water subsystem is declared inoperable.
6. Surveillance Requirement 4.5.G.1 is revised to increase the time allowed to verify that a diesel generator is operable after declaring a diesel generator, or an offsite power source and a diesel generator (refer to Surveillance Requirement 4.8.3.a), to be inoperable from immediately to eight (8) hours. The operable diesel generator will then be tested every three days thereafter.

7. Limiting Condition for Operation (LCO) 4.5.J.2 is revised to specify that the associated diesel generator is required to be operable. The monthly diesel generator test demonstrates operability. Surveillance Requirement 4.5.J.2 is revised to eliminate diesel generator testing when one river water supply system loop is declared inoperable.
8. 3.5 Bases are revised to reflect the above changes.
9. Surveillance Requirement 4.8.C.2 is revised. Since the inoperability of an emergency service water pump/loop results in the inoperability of the corresponding diesel generator, due to loss of cooling, this Surveillance Requirement will refer to Surveillance Requirement 4.8.B.1, operation with an inoperable diesel generator.

Generic Letter 84-15 and IE Information Notice 85-32, "Recent Engine Failures of Emergency Diesel Generators," recommend a reduction in the frequency of diesel generator fast start tests from ambient conditions. By performing diesel generator starts for surveillance testing using engine prelube and other manufacturer recommended procedures, engine stress and wear can be reduced. This proposed change will revise Surveillance Requirement 4.8.A.1.a to allow monthly diesel generator slow starts, in lieu of the current fast starts, with a required fast start once every six months.

This proposed change will reduce the number of diesel generator tests currently required by DAEC Technical Specifications. It will reduce the potential for degradation of diesel generators due to excessive testing and, as a result, could be expected to increase diesel generator reliability.

This proposed amendment also clarifies Limiting Conditions for Operation (LCO) 3.5.G.1 and Surveillance Requirement 4.5.G.1. DAEC Technical Specifications currently require that should a diesel generator be declared inoperable, all of the low pressure core and containment cooling subsystems be demonstrated operable. This is being revised to require only those low pressure core and containment cooling subsystems that depend on the operable diesel generator for emergency power be demonstrated operable. This is consistent with Standard Technical Specifications (3.8.1.1).

Additionally, this proposed amendment will update the referenced ASTM Standard by which the diesel fuel is tested. As committed to in our April 21, 1980, response (LDR-80-111) to a generic letter dated January 7, 1980, we updated our diesel fuel testing criteria to that of ASTM D975-77. This proposed change will revise the technical specifications to be consistent with our current testing program.

List of Affected Pages

3.5-2	3.5-25
3.5-3	3.8-1
3.5-5	3.8-2
3.5-9	3.8-6
3.5-10	3.8-11
3.5-12	3.8-12
3.5-16	3.8-13
3.5-17	3.8-14
3.5-23	

LIMITING CONDITION FOR OPERATIONSURVEILLANCE REQUIREMENT

	<u>Item</u>	<u>Frequency</u>
	d. Pump flow rate - Both loops shall deliver at least 3020 gpm against a system head corresponding to a reactor vessel pressure of 113 psig.	Once/3 months
2. From and after the date that one of the core spray subsystems is made or found to be inoperable for any reason, continued reactor operation is permissible during the succeeding seven days provided that during such seven days all active components of the other core spray subsystem and active components of the LPCI subsystem and the diesel generators are OPERABLE.	2. When it is determined that one core spray subsystem is inoperable, the OPERABLE core spray subsystem and the LPCI subsystem shall be demonstrated to be OPERABLE immediately. The OPERABLE core spray subsystem shall be demonstrated to be OPERABLE daily thereafter.	
3. The LPCI Subsystem shall be OPERABLE whenever irradiated fuel is in the reactor vessel, and prior to reactor startup from a COLD CONDITION, except as specified in 3.5.A.4, 3.5.A.5 and 3.5.G.3 below.	3. LPCI Subsystem Testing shall be as follows: a. Simulated Automatic Actuation Test b. Pump Operability	Once/OPERATING CYCLE Once/month

LIMITING CONDITION FOR OPERATIONSURVEILLANCE REQUIREMENT

	<u>Item</u>	<u>Frequency</u>
	c. Motor Operated Valve Operability	Once/month
	d. Pump Flow Rate	Once/3 months
	Three LPCI pumps shall deliver 14,400 gpm against a system head corresponding to a vessel pressure of 20 psig based on individual pump tests.	
4. From and after the date that one of the RHR (LPCI) pumps is made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding thirty days provided that during such thirty days the remaining active components of the LPCI subsystem, the containment cooling subsystem, and all active components of both core spray subsystems and the diesel-generators are OPERABLE.	4. When it is determined that one of the RHR (LPCI) pumps is inoperable at a time when it is required to be OPERABLE, the remaining active components of the LPCI subsystem, the containment spray subsystem and both core spray subsystems shall be demonstrated to be OPERABLE immediately and the OPERABLE LPCI pump daily thereafter.	
5. From and after the date that two RHR pumps (LPCI mode) are made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding 7 days unless at least one of the inoperable pumps is sooner made OPERABLE, provided that during such 7 days all active components of both core spray subsystems, the containment spray subsystem and the diesel-generators required for operation of such components are OPERABLE.	5. When it is determined that the LPCI subsystem is inoperable, both core spray subsystems and the containment spray subsystem shall be demonstrated to be OPERABLE immediately and daily thereafter.	

LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENT

- | LIMITING CONDITION FOR OPERATION | SURVEILLANCE REQUIREMENT |
|---|---|
| <p>2. From and after the date that one of the RHR Service Water subsystem pumps is made or found to be inoperable for any reason, reactor operation must be limited to thirty days unless OPERABILITY of that pump is restored within this period. During such thirty days all other active components of the RHR Service Water subsystem are OPERABLE.</p> | <p>2. When it is determined that one RHR Service Water pump is inoperable, the remaining components of that subsystem and the other subsystems shall be demonstrated to be OPERABLE immediately and daily thereafter.</p> |
| <p>3. From and after the date that one RHR Service Water pump in each subsystem is made or found to be inoperable for any reason, reactor operation is limited to seven days unless OPERABILITY of at least one pump is restored within this period. During such seven days all active components of both RHR Service Water subsystems and their associated diesel generators required for operation of such components (if no external source of power were available), shall be OPERABLE.</p> | <p>3. When one RHR Service Water pump in each subsystem becomes inoperable, the remaining components of both subsystems shall be demonstrated to be OPERABLE immediately and daily thereafter.</p> |
| <p>4. From and after the date that one RHR Service Water subsystem is made or found to be inoperable for any reason, reactor operation is limited to seven days unless OPERABILITY of one pump is restored within this period. During such seven days all active components of the other RHR Service Water subsystem, and its associated diesel-generator required for operation of such components (if no external source of power were available), shall be OPERABLE.</p> | <p>4. When one RHR Service Water subsystem becomes inoperable, the OPERABLE subsystem shall be demonstrated to be OPERABLE immediately and daily thereafter.</p> |
| <p>5. If the requirements of 3.5.C cannot be met, an orderly SHUTDOWN of the reactor shall be initiated and the reactor shall be in the COLD SHUTDOWN Condition within 24 hours.</p> | |

LIMITING CONDITIONS FOR OPERATION

- F. Automatic Depressurization System (ADS)
1. The Automatic Depressurization Subsystem shall be OPERABLE whenever there is irradiated fuel in the reactor vessel and the reactor pressure is greater than 100 psig and prior to a startup from a Cold Condition, except as specified in 3.5.F.2 below.
 2. From and after the date that one valve in the automatic depressurization subsystem is made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding thirty days unless such valve is sooner made OPERABLE, provided that during such thirty days the HPCI subsystem is OPERABLE.
 3. If the requirements of 3.5.F cannot be met, an orderly SHUTDOWN shall be initiated and the reactor pressure shall be reduced to at least 100 psig within 24 hours.
- G. Minimum Low Pressure Cooling and Diesel Generator Availability
1. During any period when one diesel generator is inoperable, continued reactor operation is permissible only during the succeeding seven days unless such diesel generator is sooner made OPERABLE, provided

SURVEILLANCE REQUIREMENT

- F. Automatic Depressurization System (ADS)
1. During each operating cycle the following tests shall be performed on the ADS:
 - a. A simulated automatic actuation test shall be performed prior to startup after each REFUELING OUTAGE.
 - b. During each REFUELING OUTAGE the ADS Nitrogen Accumulator check valves will be leak tested for a maximum acceptable system leakage rate of 25 scc/minute.
 2. When it is determined that one valve of the ADS is inoperable, the ADS subsystem actuation logic for the other ADS valves and the HPCI subsystem shall be demonstrated to be OPERABLE immediately and at least daily thereafter.
- G. Minimum Low Pressure Cooling and Diesel Generator Availability
1. When it is determined that one diesel generator is inoperable, the remaining diesel generator shall be demonstrated to be OPERABLE within eight (8) hours and every three (3) days thereafter. In addition, all low pressure core cooling and containment cooling subsystems supported by the OPERABLE diesel shall be demonstrated to be OPERABLE immediately and daily thereafter.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENT

that the remaining diesel generator and all the low pressure core and containment cooling subsystems supported by the OPERABLE diesel generator are OPERABLE. If this requirement cannot be met, an orderly SHUTDOWN shall be initiated and the reactor shall be placed in the COLD SHUTDOWN Condition within 24 hours.

2. Any combination of inoperable components in the core and containment cooling systems shall not defeat the capability of the remaining OPERABLE components to fulfill the cooling functions.
3. When irradiated fuel is in the reactor vessel and the reactor is in the COLD SHUTDOWN Condition, both core spray systems, the LPCI and containment cooling subsystems may be inoperable, provided no work is being done which has the potential for draining the reactor vessel.
4. During a REFUELING OUTAGE, refueling operations may continue with the suppression pool volume below the minimum values specified in Specification 3.7.A.1 provided all of the following conditions are met:
 - (a) The reactor head is removed, the cavity is flooded, the spent fuel pool gates are removed and spent fuel pool water level is maintained within the limits of Specification 3.9.C.

LIMITING CONDITION FOR OPERATIONSURVEILLANCE REQUIREMENTJ. River Water Supply System

1. Except as specified in 3.5.J.2 below, at least one pump in each river water supply system loop shall be OPERABLE whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212°F.

2. From and after the date that one river water supply system loop is made or found to be inoperable for any reason, reactor operation must be limited to seven days unless OPERABILITY of that subsystem is restored within this period. During such seven days all active components of the other river water supply loop and its associated diesel generator required for operation of such components shall be OPERABLE.
3. If the requirements of 3.5.J.2 cannot be met, an orderly SHUTDOWN shall be initiated and the reactor shall be in a COLD SHUTDOWN condition within 24 hours.

J. River Water Supply System

1. River Water Supply System Testing:

<u>Item</u>	<u>Frequency</u>
a. Simulated automatic actuation Test.	Each REFUELING OUTAGE.
b. Pump and motor operated valve operability.	Once/3 months
c. Flow Rate Test	
Each river water supply system pump shall deliver at least 6000 gpm at TDH of 46 ft. or more.	After major pump maintenance and monthly. Daily when river elevation is less than 727 feet.
d. Operating Pump Flow Rate Demonstration	
Each Operating River Water Supply System Pump shall deliver at least 6000 gpm.	Daily
2. When one river water supply system loop becomes inoperable, the OPERABLE loop shall be demonstrated to be OPERABLE immediately and daily thereafter.	

Using the results developed in this reference, the repair period is found to be 1/2 the test interval. This assumes that the core spray subsystems and LPCI constitute a 1 out of 3 system; however, the combined effect of any of the two subsystems to limit excessive clad temperatures must also be considered. The test interval specified in Specification 4.5 is 1 month. Should a subsystem fail, a daily test is called for on the remaining systems to ensure that they will function.

Should one core spray subsystem become inoperable, the remaining core spray and the LPCI subsystem are available should the need for core cooling arise. To assure that the remaining core spray and LPCI subsystems are available, they are demonstrated to be operable. This demonstration includes a manual initiation of the pumps and associated valves. The diesel generator monthly surveillance test assures diesel generator availability.

Should the loss of one LPCI pump occur, a nearly full complement of core and containment spray equipment is available. The remaining three LPCI pumps and a core spray subsystem will perform the core cooling function. Because of the availability of the majority of the core cooling equipment, which will be demonstrated to be operable, a thirty day repair period is justified. If the LPCI subsystem is not available, at least

1 LPCI pump must be available to fulfill the containment spray function. The 7 day repair period is set on this basis.

B&C Containment Spray and RHR Service Water

The containment spray subsystem for DAEC consists of 2 loops each with 2 LPCI pumps and 2 RHR service water pumps per loop. The design of these systems is predicted upon use of 1 LPCI, and 2 RHR service water pumps for heat removal after a design basis event. Thus, there are ample spares for margin above the design conditions. Loss of margin should be avoided and the equipment maintained in a state of operability so a 30-day out-of-service time is chosen for this equipment. If one loop is out-of-service, or one pump in each loop is out-of-service, reactor operation is permitted for seven days with daily testing of the operable loop(s). The diesel generator monthly surveillance test assures diesel generator availability.

With components or subsystems out-of-service, overall core and containment cooling reliability is maintained by demonstrating the operability of the remaining cooling equipment. The degree of operability to be demonstrated depends on the nature of the reason for the out-of-service equipment. For routine out-of-service periods caused by preventative

G. Minimum Low Pressure Cooling and Diesel Generator
Availability

The purpose of Specification G is to assure that adequate core cooling equipment is available at all times. It is during refueling outages that major maintenance is performed and during such time that all low pressure core cooling systems may be out of service. This specification provides that should this occur, no work will be performed on the primary system which could lead to draining the vessel. This work would include work on certain control rod drive components and recirculation system. Thus, the specification precludes the events which could require core cooling. Since the system cannot be pressurized during refueling, the potential need for core flooding only exists and the specified combination of the core spray or the LPCI system can provide this. Specification 3.8 must also be consulted to determine other requirements for the diesel generators. To prevent extensive wear and stress on the diesel engines, the diesels are manually started and the speed incrementally increased to synchronous speed.

H. Maintenance of Filled Discharge Pipe

If the discharge piping of the core spray, LPCI subsystem, HPCI, and RCIC are not filled, a water hammer can develop

J. River Water Supply System

Four river water supply pumps in two loops of two pumps each are provided. Both loops discharge into the wet-pit sump of the RHR and emergency service water system. One river water supply pump is sufficient to supply water to an entire train of RHR and emergency service water pumps, which in turn provide sufficient service water for containment and component cooling after a loss-of-coolant accident. An additional pump is required to be operable in Specification 3.5.J.1 to provide a completely redundant river water supply for the other RHR and emergency service water train. Because of the almost continuous operation of the river water supply system during normal operation, two additional pumps, for a total of four, have been installed to provide flexibility in maintenance and operation as well as additional system reliability.

In the event that one river water supply system loop becomes inoperable, plant operation is restricted to seven days provided both pumps in the operable loop are tested daily. The diesel generator monthly surveillance test assures diesel generator availability.

LIMITING CONDITION FOR OPERATION

3.8 AUXILIARY ELECTRICAL SYSTEM

Applicability:

Applies to the auxiliary electrical power system.

Objective:

To assure an adequate supply of electrical power for operation of those systems required for safety.

Specification:A. Auxiliary Electrical Equipment

The reactor shall not be made critical unless all of the following conditions are satisfied:

1. Both off-site sources and the startup transformers and standby transformers are available and capable of automatically supplying power to the 4kV emergency buses.
2. The two diesel-generators shall be operable and there shall be a minimum of 35,000 gallons of diesel fuel in the diesel fuel oil tank.
3. All station 24, 125 and 250 volt battery systems shall be operable. The associated battery chargers for the 24 volt batteries, two of the three battery chargers for the 125 volt station batteries, and one of the two 250 volt battery chargers shall be OPERABLE.
4. The emergency 4160 volt buses 1A3 and 1A4, and 480 volt buses 1B3, 1B4, 1B9 and 1B20 shall be energized and OPERABLE.

SURVEILLANCE REQUIREMENT

4.8 AUXILIARY ELECTRICAL SYSTEM

Applicability:

Applies to the periodic testing requirements of the auxiliary electrical systems.

Objective:

Verify the operability of the auxiliary electrical system.

Specification:A. Auxiliary Electrical Equipment

1. Diesel-Generators
 - a. Monthly Start Test
 - 1) Once each month both diesel-generators shall be manually started, the speed increased from idle to synchronous and then manually loaded to demonstrate operational readiness. The test shall continue for at least a one-hour period at rated load.

During the monthly generator test the diesel-generator starting air compressor shall be checked for operation and its ability to recharge air receivers. The operation of the diesel fuel oil transfer pumps shall also be demonstrated during this test; or
 - 2) Once each six (6) months both diesel-generators shall be manually started and loaded to demonstrate that they will reach rated frequency and voltage within specified time limits. This test is to be run in lieu of the regular monthly test.

LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENT

During the semiannual test the same checks to the air start system and fuel oil pumps performed during monthly testing shall be performed. In addition, the diesel starting time to reach rated frequency and voltage shall be logged.

- b. Once per OPERATING CYCLE the condition under which the diesel-generator is required will be simulated and a test conducted to demonstrate that it will start and accept the emergency load within the specified time sequence. The diesel-generator shall be operated loaded for a minimum of 5 minutes. The results shall be logged.
 - c. The quantity of diesel fuel available shall be logged monthly and after each use of the diesels.
 - d. Once a month a sample of diesel fuel shall be checked for viscosity, water and sediment. The values for viscosity, water and sediment shall be within the acceptable limits specified in Table 1 of ASTM D975-77 and logged.
 - e. Each diesel-generator shall be given an annual inspection in accordance with instructions based on the manufacturer's recommendations.
 - f. A sample test and record shall be made of each oil delivery before it is placed in the storage tank.
2. Unit Batteries
 - a. Every week the specific gravity, the voltage and temperature of the pilot cell and overall battery voltage shall be measured and logged.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
C. <u>Emergency Service Water System</u>	C. <u>Emergency Service Water System</u>
1. Except as specified in 3.8.C.2 below, both emergency service water system loops shall be OPERABLE whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212°F.	1. Emergency Service Water Subsystem Testing
2. From and after the date that one of the emergency service water system pumps or loops is made or found to be inoperable for any reason, reactor operation must be limited to seven days unless OPERABILITY of that system is restored within this period. During such seven days all active components of the other Emergency Service Water System shall be OPERABLE, provided the requirements of 3.5.G are met.	a. Simulated automatic actuation test. each REFUELING OUTAGE b. Pump and motor operated valve operability once/3 months
3. If the requirements of 3.8.C cannot be met, an orderly SHUTDOWN shall be initiated and the reactor shall be in a COLD SHUTDOWN condition within 24 hours.	c. Flow Rate Test Each emergency service water pump shall deliver at least that flow determined from Figure 4.8.C-1 for the existing river water temperature. after major pump maintenance and every month, except weekly during periods of time the river water temperature exceeds 80°F.
2. From and after the date that one of the emergency service water system pumps or loops is made or found to be inoperable for any reason, reactor operation must be limited to seven days unless OPERABILITY of that system is restored within this period. During such seven days all active components of the other Emergency Service Water System shall be OPERABLE, provided the requirements of 3.5.G are met.	2. When one emergency service water system pump or loop becomes inoperable, the OPERABLE pump and loop shall be demonstrated to be OPERABLE immediately and daily thereafter. In addition, the requirements of 4.5.G.1 shall be met.

4.8 BASES:

The monthly tests of the diesel-generators are conducted to demonstrate satisfactory system performance and operability. To prevent extensive wear and stress on the diesel engines, the diesels are manually started and the speed incrementally increased to synchronous speed. Once every six months, a test is performed to demonstrate the fast start capabilities of the diesel engines to accelerate to rated speed as required for the design basis for the plant. The test of the automatic starting circuits will prove that each diesel will receive all automatic start signals. The loading of each diesel-generator is conducted to demonstrate proper operation at maximum expected emergency loading and at equilibrium operating conditions. Generator experience at other generator stations, and NRC published guidance (Generic Letter 84-15), indicates that the testing frequency is adequate to assure a high reliability of operation should the system be required.

Each diesel-generator has two independent starting air supply systems. One consists of a motor driven air compressor which automatically recharges two air receivers and the other consists of a diesel driven air compressor which is manually operated to recharge a third air receiver. During the monthly check of the diesel-generator, both air start systems will be checked for proper operation.

Following the tests (at least monthly) or other operation of the units, the fuel volume remaining in the diesel oil storage tank will be checked.

At the end of the monthly loads test of the diesel-generator, the fuel oil transfer pump will be operated to refill the day tank and to check the operation of this pump. The day tank level indicator and alarm switches and fuel oil transfer pump control switches will be checked at this time.

The test of the diesels once each operating cycle will be more comprehensive in that it will functionally test the system; i.e., it will check starting and closure of breakers and sequencing of loads. The units will be started by simulation of a loss-of-coolant accident. In addition, a loss of normal power condition will be imposed to simulate a loss of off-site power. The timing sequence will be checked to assure proper loading in the time required. Periodic tests check the capability of the units to start in the required time and to deliver the expected emergency load requirements. Periodic testing of the various components plus a functional test each operating cycle are sufficient to maintain adequate reliability.

Logging the diesel fuel supply after each operation (at least monthly) assures that the minimum fuel supply requirements will be

maintained. During the monthly test for quality of the diesel fuel oil, a viscosity test and water and sediment test will be performed as described in ASTM D975-77 (reference LDR-80-111). The quality of the diesel fuel oil will be acceptable if the results of the tests are within the limiting requirements for diesel fuel oils shown on Table 1 of ASTM D975-77.

Although the station batteries will deteriorate with time, utility experience indicates there is almost no possibility of precipitous failure. The type of surveillance described in this specification is that which has been demonstrated over the years to provide an indication of a cell becoming irregular or unserviceable long before it becomes a failure.

The rated load discharge test provides adequate indication and assurance that the batteries have the specified ampere hour capacity. The rate of discharge during this test shall be in accordance with the manufacturer's discharge characteristic curves. The results of these tests will be logged and compared with the manufacturer's recommendations of acceptability.

The emergency Service Water System has two loops one pump each. If one emergency service water system loop becomes inoperable, the other loop provides cooling to components sufficient to assure performance of the safety function after an accident. Continued plant operation with one loop inoperable is restricted to a seven-day period during which time the operable emergency service water loop is tested immediately and daily thereafter. The diesel-generator providing emergency power to the operable loop is tested within eight (8) hours and every three days thereafter.