

Attachment A

Revise the Technical Specification pages as follows:

Remove

3.5-14
3.7-1
3.7-2
3.7-3
-
3.7-5
3.7-6
-
4.6-5
4.6-5a

Insert

3.5-14
3.7-1
3.7-2
3.7-3
3.7-3a
3.7-5
3.7-6
4.6-4a
4.6-5
4.6-5a

7. With the number of operable channels less than the Total Number of Channels, operation may proceed provided the inoperable channel is placed in the tripped condition within 1 hour. Should the next Channel Functional Test require the bypass of an inoperable channel to avoid the generation of a trip signal, operation may proceed until this Channel Functional Test. At the time of this Channel Functional Test, or if at any time the number of operable channels is less than the Minimum Operable Channels, either
 - a) be at Hot Shutdown within the next 6 hours and an RCS temperature less than 350°F within the following 6 hours, or
 - b) energize the affected bus with a diesel generator.
8. With the number of operable channels one less than the Minimum Operable Channels required, restore the inoperable channel to operable status within 48 hours or be in Hot Shutdown within the next 6 hours and at an RCS temperature less than 350°F within the following 6 hours.
9. With the number of operable channels one less than the Total Number of Channels required, operation may proceed until the next Channel Functional Test provided the inoperable channel is placed in the tripped position within 1 hour. At the next Channel Functional Test, or at any time the number of operable channels is less than the Minimum Operable Channels required, be at Hot Shutdown within the next 6 hours and at an RCS temperature less than 350°F within the following 6 hours.
10. With the number of operable channels one less than the Minimum Operable Channels required, restore the inoperable channel to operable status within 48 hours or be in Hot Shutdown within an additional 6 hours, and at cold shutdown within the following 30 hours.
11. With the number of operable channels less than the Total Number of Channels, operation may proceed provided the inoperable channel is placed in the tripped condition within 2 hours. Should the next Channel Functional Test require the bypass of an inoperable channel to avoid the generation of an actuation signal, operation may proceed until this Channel Functional Test. At the time of this Channel Functional Test, or if at any time the number of operable channels is less than the Minimum Operable Channels required, be at Hot Shutdown within 6 hours and at Cold Shutdown within the following 30 hours.

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 to provide for the continuing availability of engineered safeguards.

3.7.1 Specification

3.7.1.1 When in cold shutdown or refueling, with fuel in the reactor vessel, the following conditions are to be met:

- a. One independent offsite power source operable, or backfeed through unit auxiliary transformer 11; and
- b. One train of 480-volt buses (14 and 18, or 16 and 17) operable; and
- c. One diesel generator operable with onsite supply of 5,000 gallons of fuel available and either buses 14 and 18, or 16 and 17, capable of being supplied from that diesel generator.
- d. One battery and one dc system, and at least 150 amps of battery charger capacity to the battery must be operable.
- e. Either 120 volt A.C. Instrument Bus 1A or 1C energized from its associated inverter.

3.7.1.2 Actions To Be Taken If Conditions of 3.7.1.1 Are Not Met:

With less than the above minimum required power source operable, immediately suspend all operations involving positive reactivity changes, core alterations, movement of

irradiated fuel and initiate corrective action to restore the required power sources to operable status.

3.7.2 Specification

3.7.2.1 The reactor coolant system shall not be taken above the mode indicated unless the following conditions are met:

a. Above cold shutdown;

1. One independent offsite power source operable.
2. the 480-volt buses 14 and 18 (Train A) and buses 16 and 17 (Train B) are energized.
3. the two diesel generators are operable with onsite supply of 5,000 gallons of fuel available for each diesel generator.
4. both batteries and both dc systems are operable.
5. at least 150 amps of battery charging capacity for each DC system that is in service.
6. 120 volt A.C. Instrument Buses 1A and 1C are energized from their associated inverters.
7. 120 volt A.C. Instrument Bus 1B is energized from its associated constant voltage transformer from MCC 1C.

b. Above 350°F:

1. All conditions of 3.7.2.1a above are met; and
2. Two offsite sources (34.5 kv-4160 volt station service transformers, 12A with dedicated circuit 751, and 12B with dedicated circuit 767) are operable.

3.7.2.2 Actions To Be Taken If Conditions of 3.7.2.1 Are Not Met:

- a. Operation above 350°F may continue with one offsite source inoperable, provided all remaining conditions of 3.7.2.1 are met.
- b. With one or both independent offsite sources operable, and one diesel generator inoperable above cold shutdown, demonstrate the operability of the remaining diesel generator by:

1. Performing the surveillance requirements identified in Specifications 4.6.1.b.4 and 4.6.1.b.6 within 1 hour and at least once per 24 hours thereafter and restore the inoperable diesel generator to operable status within 7 days; OTHERWISE:
 2. Reduce to a mode equal to or below hot shutdown within the next 6 hours and be in cold shutdown within the following 30 hours.
- c. With one safety related 480V Bus (i.e., bus 14 or 16 or 17 or 18) de-energized, re-energize the bus within 1 hour or reduce to a mode equal to or below hot shutdown within the next 6 hours and be in cold shutdown within the following 30 hours, unless corrective actions are complete that permit continued operation (i.e., the bus is returned to service).
- d. With both independent offsite sources inoperable, both diesel generators must be operable. In addition, restore one independent offsite source within 72 hours, or reduce to a mode equal to or below hot shutdown within the next 6 hours and be in cold shutdown within the following 30 hours.
- e. Operation above cold shutdown may continue if less than 150 amps of battery charging capacity is available to one dc system, provided at least 150 amps of battery charging capacity is available to each dc system within 2 hours. If not available, reduce to a mode equal to or below hot shutdown within the next 6 hours and be in cold shutdown within the following 30 hours.

f. With either Instrument Bus 1A or 1C not energized from its associated inverter:

1. Re-energize the bus within 2 hours (backup or maintenance supply), AND
2. Re-energize the bus from a safety related supply (backup or inverter) within 24 hours, AND
3. Re-energize the bus from its associated inverter within 72 hours, OTHERWISE
4. Reduce to a mode equal to or below hot shutdown within the next 6 hours and be in cold shutdown within the following 30 hours.

g. With Instrument Bus 1B not energized from its associated constant voltage transformer (CVT) from MCC 1C:

1. Re-energize the bus within 2 hours (maintenance supply), AND
2. Re-energize the bus from its associated CVT from MCC 1C within 7 days, OTHERWISE
3. Reduce to a mode equal to or below hot shutdown within the next 6 hours and be in cold shutdown within the following 30 hours.

Safe shutdown of the plant, and (2) the mitigation and control of accident conditions within the plant.

When the RCS is above cold shutdown, both emergency diesel generators are required to be operable. The two diesel generators have sufficient capacity to start and run all the engineered safeguards equipment at design loads. The safeguards equipment operated from one diesel generator can adequately cool the core and maintain the containment pressure within the design value for any loss of coolant incident. The minimum diesel fuel oil inventory is maintained to assure that both diesels can operate at their design ratings for 24 hours. This assures that both diesels can carry the design loads of required engineered safeguards equipment for any loss of coolant accident conditions for at least 40 hours, or for one engineered safety feature train for 80 hours. ⁽¹⁾ Commercial oil supplies and trucking facilities exist to assure deliveries within 8 hours.

The offsite power source consists of separate dedicated 34.5 kv-4160 volt station service transformers served by dedicated 34.5 kv lines (12A transformer with dedicated circuit 751, or 12B transformer with dedicated circuit 767) in operable status. Either offsite source of power can supply all auxiliary loads and transfer can be accomplished within the time constraints of GDC 17. Thus, GDC 17 is explicitly met.

With fuel in the reactor vessel a minimum of one offsite source, one onsite source of AC power and one DC power train are required. The offsite power source may be provided by one of three configurations:

1. Transformer 12A served by a dedicated 34.5 kv line (circuit 751), or
2. Transformer 12B served by a dedicated 34.5 kv line (circuit 767), or
3. Backfeed through unit auxiliary transformer 11.

The offsite power source is the preferred source of AC power. Operability of an offsite source requires that one station service transformer served by a dedicated 34.5 kv line is operating and providing power to the unit. The emergency diesel generator provides power upon loss of the offsite source. One emergency diesel generator with 5,000 gallons of fuel can provide power to a minimum level of engineered safeguards equipment for 40 hours (the required safeguards loads at cold shutdown/refueling are significantly less than during power operation). One operable diesel fuel oil transfer pump is required to supply fuel from one of the two fuel storage tanks to the day tank of the operable diesel generator. With less than one offsite AC power source, and one onsite AC power source, one DC power train, and one battery backed instrument bus available, no operations involving positive reactivity changes, core alterations, and movement of irradiated fuel shall occur.

Battery chargers with at least 150 amps capacity shall be in service for each battery so that the batteries will always be at full charge. This ensures that adequate dc power will be available.

The plant can be safely shutdown without the use of offsite power since all vital loads (safety systems, instruments, etc.) can be supplied from the emergency diesel generators and the station batteries. Instrument Buses 1A, 1B, and 1C provide power to vital plant instrumentation. All three buses are backed up by safety related emergency supplies; bus 1A from battery 1A, bus 1C from battery 1B, and bus 1B from diesel generator 1A.

4.6.4

Instrument Buses

Each safety related instrument bus required to be operable, shall be demonstrated operable at least once per 7 days by:

1. Verifying nominal voltage indications on the Instrument Buses 1A, 1B, 1C.
2. Verifying proper supply breaker alignment for Instrument Buses 1A, 1B, and 1C.
3. Verifying proper static switch alignment for Instrument Buses 1A and 1C.

Basis

The tests specified are designed to demonstrate that the diesel generators will provide power for operation of equipment. They also assure that the emergency generator system controls and the control systems for the safeguards equipment will function automatically in the event of a loss of all normal 480V AC station service power.

(1)

The testing frequency specified will be often enough to identify and correct any mechanical or electrical deficiency before it can result in a system failure. The fuel supply and starting circuits and controls are continuously monitored and any faults are indicated by alarm. An abnormal condition in these systems can be identified without having to test the diesel generators.

Periodic tests are also specified to demonstrate that the offsite power sources will provide power for operation of equipment.

Offsite power source operability requires correct breaker alignment and indicated power availability from the two preferred power circuits, 767 and 751, to the 4160 volt buses. These requirements are met by monitoring nominal voltage indications on the high-voltage side of transformers 12A and 12B; and on the 4160 volt buses 12A and 12B.

Offsite power source independence requires separate 4160 volt circuits supplying power to the 4160 volt buses. Interlocks prevent concurrent closure of 12AX and 12BX, OR 12AY and 12BY; and surveillance is specified to ensure separation is maintained.

Instrument bus power source operability requires correct breaker alignment and indicated power availability. These requirements are met by monitoring nominal voltage indications on the buses and proper breaker alignment.

Furthermore, to assure independence between redundant Class 1E 480 volt buses 14 and 18 (Train A) and buses 16 and 17 (Train B), tie breakers 52/BT16-14 and 52/BT17-18 are required to be open when the plant mode is above 200°F. Once tie breakers are open, interlocks prevent closure when independent and redundant buses are energized.

Station batteries may deteriorate with time, but precipitous failure is extremely unlikely. The surveillance specified is that which has been demonstrated over the years to provide an indication of a cell becoming unserviceable long before it fails, and to ensure that the battery capacity is acceptable.

The equalizing charge, as recommended by the manufacturer, is vital to maintaining the ampere-hour capability of the battery. As a check upon the effectiveness of the equalizing charge, the battery should be loaded rather heavily and the voltage monitored as a function of time. If a cell has deteriorated or if a connection is loose, the voltage under load will drop excessively indicating replacement or maintenance.

The minimum permissible on-site fuel inventory, 10,000 gallons, (5,000 gallons for each generator), is sufficient for operation under loss-of-coolant accident conditions of two engineered safety features trains for 40 hours, or for one train for 80 hours, or for operation of both diesel generators at their design ratings for 24 hours. (2)

References

- (1) UFSAR, Section 8.3
- (2) UFSAR, Section 9.5.4

Attachment B

The purpose of this Amendment is to incorporate requirements for the operability and surveillance of safety related instrument buses into the Auxiliary Electrical Systems Technical Specifications. This Amendment also corrects an inconsistency in the existing required action statement for a loss of both offsite power supplies. The detailed changes are listed in Table 1.

Requirements for safety related instrument bus operability have been added based on reactor coolant system operation above and below cold shutdown. Previously no instrument bus operability requirements, required actions, nor surveillance requirements were specified in the Technical Specifications. Consequently, this Amendment is considered an enhancement to the Technical Specifications. The changes in this Amendment are based on the Standard Technical Specifications for Westinghouse Pressurized Water Reactors (NUREG-0452), with deviations to address specific design features at the Ginna Station.

Specification 3.7.1.1 was modified to add the requirement for one battery backed safety related instrument bus to be operable during cold shutdown and refueling. The phrase "when in cold shutdown or refueling" was added to this Specification since previously no applicable modes were explicitly specified. This specification ensures the availability of one channel of continuous indication while allowing for maintenance and surveillance testing on one safety related battery.

Section 3.7.2.1.a was modified to add requirements for safety related instrument bus operability above cold shutdown. The Specification requires operability of both battery backed instrument buses and the emergency diesel generator backed instrument bus. Although Standard Technical Specifications only provide operability requirements for battery backed buses (i.e. vital buses), the diesel backed bus at Ginna provides power for instrumentation used for the Reactor Protection System (RPS), Engineered Safety Features Actuation System (ESFAS), and for post accident monitoring functions. Therefore operability requirements are specified for this bus. Previous technical specifications identified no operability requirements for instrument buses above cold shutdown. This specification requires all three buses to be operable, and is therefore considered conservative.

Section 3.7.2.2.d was changed to require plant shutdown to the cold shutdown mode if no offsite sources are available. This is considered a conservative change since previously the specification only required achieving a Reactor Coolant System temperature below 350°F. The change was made due to an apparent inconsistency with Specification 3.7.2.1.a.1 which required one offsite source to be operable above cold shutdown.

The actions specified within Section 3.7.2.2.f provide requirements when one safety related battery backed instrument bus is out of service. The specification requires the bus to be re-energized within two hours, re-energized from a safety related supply within 24 hours, and re-aligned to its battery backed supply within 72 hours. The Ginna Station safety related battery backed instrument buses (A and C) can be supplied from three sources:

1. Its normal supply from a safety related DC bus via an inverter;
2. A backup supply from a safety related 480 V bus (diesel generator backed) via a constant voltage transformer;
3. A maintenance supply from a non-safety related 480 V bus via a constant voltage transformer.

Standard Technical Specifications do not address the availability of multiple backup supplies. As such, this proposed specification deviates from the Standard Technical Specification in that additional time is allowed to restore the bus to its normal supply if the bus is re-energized from its safety related backup supply. When either instrument bus A or C is supplied from its safety related backup supply the plant is only susceptible to a single failure causing loss of the containment spray automatic actuation signal. Given the low probability of the requirement of this function (large break LOCA or main steamline break in containment), and the availability of manual initiation, the allowed time is considered appropriate.

The actions specified in Section 3.7.2.2.g provide requirements when the emergency diesel generator backed instrument bus (B) to be out of service. The specification requires the bus to be re-energized within 2 hours and re-energized from its safety related constant voltage transformer within 7 days. The Standard Technical Specifications contain no action requirements for diesel backed instrument buses out of service. Instrument bus B has only one alternate supply, a maintenance supply from a non-safety related 480 V bus via a constant voltage transformer. Again the only safety related function susceptible to a single failure is the containment spray automatic actuation signal. The time allowed to restore the bus to its normal supply is chosen based on the low probability that this function is required, the time required to repair or replace failed equipment, and to be consistent with the allowed out of service time for its safety related backup supply (ref. Specification 3.7.2.2.B.1)

Action Statement 11 of Technical Specification Section 3.5 was also changed to allow 2 hours to place an inoperable Containment Spray automatic initiation channel in trip. This change provides consistency with Specifications 3.7.2.2.f and g. An inoperable instrument bus causes an inoperable automatic Containment Spray initiation channel since this function is energize to actuate. No easily achievable means exists to place the inoperable channel in trip if instrument power is unavailable. This allowed time (2 hours, consistent with NUREG-0452) is acceptable due to the low probability of requiring the automatic initiation function (LBLOCA or MSLB in containment), and the continued availability of the manual initiation function.

The basis for section 3.7 was modified to reflect these additional specifications. In addition a change was made to the basis for onsite diesel fuel oil requirements. This change is a clarification resulting from the Electrical

Distribution System Functional Inspection (EDSFI) conducted at Ginna in 1991. Research of the design basis for the minimum onsite fuel oil storage requirements revealed that storage capability was specified to allow operation of both emergency diesel generators at design ratings for 24 hours. In response to questions during the initial licensing of the plant, this requirement was translated into hours that the emergency diesel generators would be able to support Engineered Safety Features loads for a large break LOCA, and hours that the diesels would be able to support hot standby operation. The hot standby comparison is not considered a safety related requirement and has therefore been deleted as a basis for the specification. The original 24 hour requirement has been added, and the safety related 40 hour requirement retained.

Section 4.6.4 was added to the Technical Specifications to provide surveillance requirements for the safety related instrument buses. These requirements ensure proper alignment and functionality of the buses. The methodology and frequency is consistent with Standard Technical Specification surveillance requirements for vital instrument buses. The basis for Section 4.6 was also modified to provide the basis for this new requirement, and to clarify the minimum onsite diesel fuel oil requirement as described above.

In accordance with 10CFR50.91, these changes to Technical Specifications have been evaluated to determine if the operation of the facility in accordance with the proposed amendment would:

1. involve a significant increase in the probability or consequences of an accident previously evaluated; or
2. create the possibility of a new or different kind of accident previously evaluated; or
3. involve a significant reduction in a margin of safety.

These proposed changes do not increase the probability or consequences of a previously evaluated accident or create a new or different kind of accident. Further, there is no unacceptable reduction in the margin of safety for any Technical Specification.

Therefore, Rochester Gas and Electric submits that the issues associated with this Amendment are outside the criteria of 10CFR50.91, and a no significant hazards finding is warranted.

TABLE 1
DETAILED DESCRIPTION OF CHANGES

<u>PAGE</u>	<u>CHANGE</u>	<u>REASON FOR CHANGE</u>
3.5-14	Action Statement 11. Changed "within 1 hour" to "within 2 hours"	This change allows additional time to place an inoperable Containment Spray automatic initiation channel in trip. This is consistent with allowed out of service times for the instrument buses, and is necessary due to the difficulty in placing a channel in trip when an instrument bus is deenergized. The change is acceptable due to the low probability of requiring automatic spray initiation, and the availability of manual initiation.
3.7-1	Section 3.7.1.1 Added phrase "When in cold shutdown or refueling,...."	No technical change. Minor clarification to specify modes when this Specification is applicable.
3.7-1	Section 3.7.1.1. Added item e.	New Technical Specification requirements for safety related battery backed Instrument Bus Operability during cold shutdown. There were previously no requirements.
3.7-2	Section 3.7.2.1.a. Added items 6 and 7.	New Technical Specification requirements for safety related Instrument Bus operability above cold shutdown. There were previously no requirements.
3.7-3	Section 3.7.2.2.d. Changed required action with two offsite sources inoperable, to require achieving cold shutdown.	Previous action statement only required achieving an RCS temperature below 350°F. This was inconsistent with Specification 3.7.2.1.a.1 which requires one offsite source to be operable above cold shutdown. The new requirement is more stringent than the previous requirement.

PAGE	CHANGE	REASON FOR CHANGE
3.7-3a	Section 3.7.2.2.f. Provides actions to be taken for safety related battery backed instrument buses out of service above cold shutdown.	New Technical Specification action requirements are consistent with Standard Technical Specifications for time allowed to re-energize the bus. Additional time to restore the bus to its inverter is allowed if the bus is re-energized from a safety related supply (diesel generator backed). There were previously no action requirements.
3.7-3a	Section 3.7.2.2.g. Provides actions to be taken when safety related Instrument Bus B (diesel generator backed) is out of service above cold shutdown	New Technical Specification action requirements are consistent with Standard Technical Specifications for time allowed to re-energize vital instrument buses. The time allowed to return the bus to its safety related supply is consistent with the allowed out of service time for its associated safety related supply (reference Technical Specification 3.7.2.2.G.1) There were previously no action requirements.

PAGE	CHANGE	REASON FOR CHANGE
3.7-5	<p>First paragraph. Clarified the basis for minimum onsite diesel generator fuel oil requirement:</p> <ol style="list-style-type: none"> 1. added full load requirement. 2. Removed "hot standby" reference. 	<p>No technical change. Research conducted in response to questions during the Ginna EDSFI indicated that the design basis of the fuel storage tanks was to provide capacity for full load operation of both diesels for 24 hours. During the initial plant licensing process questions were asked regarding how this equated to LOCA ESF loading and hot standby operation (ref. FSAR Sections 8.2.3 and Appendix 8A). This resulted in the 40 hour duration for LOCA ESF loading (80 hours for 1 train) and the 111 hour hot standby duration. Ginna has adopted the 40 hour LOCA ESF loading as a design requirement. The hot standby comparison has never been considered a design requirement and has therefore been deleted from reference here.</p>
3.7-6	<p>First paragraph. Added cold shutdown requirement of one battery backed instrument bus to the basis section.</p>	<p>Addition due to new requirements in Technical Specification 3.7.1.1.e.</p>
3.7-6	<p>Third paragraph. Added description of the safety related instrument buses to the basis section.</p>	<p>Description of safety related instrument buses was added to the basis of section 3.7 since safety-related instrument buses are now covered by this Technical Specification. Previously instrument buses were not addressed.</p>

<u>PAGE</u>	<u>CHANGE</u>	<u>REASON FOR CHANGE</u>
4.6-4a	Section 4.6.4. . Section added to provide surveillance requirements for safety related instrument buses.	New Technical Specification surveillance requirements. These requirements ensure proper alignment and functionality of the safety related instrument buses. The methodology and frequency is consistent with Standard Technical Specification requirements for vital instrument buses.
4.6-5	Added sixth paragraph to section 4.6 basis to describe the basis of new instrument bus surveillance requirements.	Provides basis for new Technical Specification surveillance requirement 4.6.4.
4.6-5a	Last paragraph. Clarified diesel generator onsite fuel oil requirement basis to be consistent with section 3.7 (see change #5).	see change #7. (Page 3.7-5, first paragraph).

