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October 11, 2011
L-11-331

10 CFR 50.90

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT:
Perry Nuclear Power Plant
Docket No. 50-440, License No. NPF-58
License Amendment Request Regarding Use of a Delayed Access Circuit as a Required Offsite Circuit in Technical Specification 3.8.1, "AC Sources – Operating"

In accordance with 10 CFR 50.90, FirstEnergy Nuclear Operating Company (FENOC) requests a license amendment to the Perry Nuclear Power Plant (PNPP) Operating License. The proposed change would revise Technical Specification (TS) 3.8.1, "AC Sources – Operating," to clarify that a delayed access circuit is temporarily qualified as one of the required offsite circuits between the offsite transmission network and the onsite Class 1E alternating current (AC) electric power distribution system. The proposed change would also add a COMPLETION TIME allowed for circuit restoration if the only OPERABLE offsite circuit is a delayed access circuit. An evaluation of the proposed amendment is enclosed. As a result of this request, FENOC elects to withdraw the license amendment request that was submitted on October 3, 2011.

As provided by 10 CFR 50.91(a)(5), the Nuclear Regulatory Commission (NRC) can issue a license amendment involving no significant hazards consideration without prior notice and opportunity for a hearing or for public comment if the commission finds that an emergency situation exists, in that failure to act in a timely way would prevent resumption of operation and result in an extended plant shutdown. Such an emergency situation currently exists at PNPP.

On September 29, 2011, at 5:29 a.m., the Unit 1 startup transformed unexpectedly failed, resulting in an inoperable offsite circuit. Based on questions raised by NRC staff related to the applicability of TS 3.8.1, FENOC completed a controlled manual shutdown of PNPP on October 2, 2011, at 4:14 p.m.

The proposed change would clarify that a delayed access circuit is temporarily qualified as an alternate for the inoperable offsite circuit, thereby supporting plant restart and resumption of operation of PNPP. Accordingly, FENOC requests the NRC to dispense with notice and comment on the determination of no significant hazards consideration

and issue the requested license amendment by October 12, 2011, to allow resumption of normal power operations. The temporary qualification of the delayed access circuit is requested to be in affect until December 12, 2011, to support restoration of the inoperable offsite circuit.

The regulatory commitments contained in this submittal are provided as an attachment. If there are any questions or if additional information is required, please contact Mr. Phil H. Lashley, Supervisor – Fleet Licensing, at (330) 315-6808.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 11, 2011.

Sincerely,

Mark B. Bezilla

Attachment:
Regulatory Commitment List

Enclosure:
Evaluation of Proposed Amendment

cc: NRC Region III Administrator
NRC Resident Inspector
NRC Project Manager
Executive Director, Ohio Emergency Management Agency, State of Ohio
(NRC Liaison)
Utility Radiological Safety Board

ATTACHMENT
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Regulatory Commitment List
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The following identifies those actions committed to by FirstEnergy Nuclear Operating Company (FENOC) for the Perry Nuclear Power Plant, in this document. Any other actions discussed in the submittal represent intended or planned actions by FENOC. They are described only as information and are not Regulatory Commitments. Please notify Mr. Phil H. Lashley, Supervisor – Fleet Licensing at (330) 315-6808 of any questions regarding this document or associated Regulatory Commitment.

The following compensatory actions will be taken, to limit the risk associated with the use of the backfeed configuration, for the duration of the temporary license amendment (December 12, 2011).

1. A protected area will be established around the Unit 2 startup transformer and associated cabling, buses and switchgear in accordance with "Protected Equipment Postings" to ensure that no work will be conducted in the vicinity of these components that could affect this electrical capability.

2. A daily inspection will be conducted to ensure no loose equipment or debris is in the vicinity of the Unit 2 startup transformer that could be picked up by high winds.

3. Daily communication will be conducted with the system control center (SCC) to ensure grid stability is maintained and any potential issues are communicated to the plant for awareness purposes. No unnecessary switchyard work will be performed. This means work will be restricted to those activities necessary to maintain switchyard reliability.

4. There will be operators assigned each shift to respond to a plant-centered loss of offsite power (LOOP) event and briefed on their specific actions to be taken in the event of a loss of the Unit 2 startup transformer while switchyard power is available.

5. The health of Unit 2 startup transformer will be monitored on a regular basis and degradation indicating a potential failure will result in a controlled shutdown.

6. The reactor core isolation cooling (RCIC) system will be posted and protected in accordance with "Protected Equipment Postings".

Subject: Temporary License Amendment Request, Regarding Use of a Delayed Access Circuit as a Required Offsite Circuit in Technical Specification 3.8.1, "AC Sources – Operating"

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Attachments

1 Main One Line Diagram 13.8 kV and 4.16 kV
2 Proposed Technical Specification Change (Mark-Up)
3 Delayed Access Circuit (Backfeed Configuration) Components Maintenance History

1.0 SUMMARY DESCRIPTION

This evaluation supports a FirstEnergy Nuclear Operating Company (FENOC) request to temporarily amend Operating License NPF-58 for the Perry Nuclear Power Plant (PNPP). Technical Specification 3.8.1 "AC Sources-Operating," is being temporarily revised to:

1. Document the acceptability of plant operation with one of the two required offsite electrical circuits being a delayed access circuit
2. Require a more restrictive 24 hour Completion Time in place of the currently permitted 72 hour period in ACTION A, should the plant be in a configuration where the only OPERABLE circuit is a delayed access circuit.

FENOC is requesting approval of this license amendment request for a temporary period of approximately 60 days to support restoration from a start up transformer failure.

2.0 DETAILED DESCRIPTION

Proposed Technical Specification Changes

The Limiting Condition for Operation (LCO) portion of Specification 3.8.1, "AC Sources - Operating," is being revised to include a note. The note indicates that until December 12, 2011, one of the two qualified circuits between the offsite transmission network and the onsite Class 1E alternating current (AC) electrical power distribution system may be a delayed access circuit.

In addition, ACTION A is being revised. When one of the two required offsite circuits is inoperable, Condition A is met and Required Action A.2 currently provides a Completion Time of 72 hours for restoration of the required offsite circuit to OPERABLE status. The proposed change is to add an additional Completion Time into this ACTION that will apply when the only OPERABLE offsite circuit is a delayed access circuit. In such a situation, the standard 72 hour time is reduced significantly, down to 24 hours, thereby further limiting plant operation in this configuration.

Figures showing the main power supply circuits are provided as Attachment 1. The proposed Technical Specification changes are provided as Attachment 2.

Emergency Situation Preventing Restart

10 CFR 50.91(a)(5) allows the Nuclear Regulatory Commission (NRC) to issue a license amendment involving no significant hazards without prior notice and opportunity for a hearing or for public comment if the commission finds that an emergency situation exists, in that failure to act in a timely way would prevent the resumption of operation. Such an emergency situation currently exists at PNPP, due to an unexpected failure of

the PNPP Unit 1 Startup Transformer, resulting in the orderly shutdown of the plant on October 2, 2011.

10 CFR 50.91(a)(5) also states the Commission will decline to dispense with notice and comment on the determination of no significant hazards consideration if it determines that the licensee has abused the emergency provision by failing to make timely application for the amendment and thus itself creating the emergency. The following information is provided to explain why this emergency situation occurred and why FENOC could not have avoided this situation.

The Unit 1 Startup Transformer unexpectedly failed at 0529 on September 29, 2011, disabling one of the qualified circuits between the offsite transmission network and the onsite Class 1E Electric Power Distribution System required by Technical Specification (TS) 3.8.1. At the time of the transformer failure, a delayed access circuit was available as an alternate to the disabled circuit. Prior to September 27, 2011, FENOC and industry experience had indicated that the delayed access circuit was an acceptable alternate to the preferred circuit, and that the resulting configuration fully satisfied all aspects of General Design Criterion 17, Electric Power Systems. An interpretation of the TS requirements relayed to the PNPP staff on that date resulted in a question regarding the acceptability of that circuit to satisfy the TS requirement. Pursuant to this interpretation, application of TS 3.8.1 required the restoration of the required offsite circuit to OPERABLE status by 0529 on October 2, 2011, or the transition of the plant to MODE 3, HOT SHUTDOWN, in the following 12 hours. Because the disabled circuit could not be restored within the required time frame, PNPP was shutdown in an orderly manner. Continued application of this interpretation of TS requirements is currently preventing the resumption of plant operation.

Although the cause of the failure is under investigation in accordance with the FENOC corrective action program, there have been no indications that FENOC could have reasonably anticipated the transformer failure. Additionally, because of the short time period (two days) between the PNPP staff becoming aware of this position regarding TS 3.8.1 and the transformer failure, FENOC did not have an adequate opportunity to fully evaluate the licensing basis and apply for an operating license amendment, if required. Based on these considerations, FENOC contends that it did not abuse the emergency provision by failing to make timely application for the amendment, and therefore did not create the emergency.

3.0 TECHNICAL EVALUATION

The LCO for Specification 3.8.1, "AC Sources-Operating," requires that two qualified circuits normally be maintained between the offsite transmission network and the onsite Class 1E AC electrical power distribution system [the 4.16 thousand volt (kV) engineered safety feature (ESF) buses]. The ACTIONs provide limitations on plant operation when this requirement is not met. This amendment allows the temporary configuration of a delayed access circuit configuration to meet the requirements of LCO 3.8.1 by providing a more limiting Completion Time for situations when only a delayed

access circuit is considered to be OPERABLE. The justification for the delayed access circuit configuration in regards to the regulatory, design, operation and risk considerations is addressed below.

3.1. Regulatory Considerations

3.1.1 Background

The circuits between the switchyard and the 13.8 kV buses [labeled L10 and L20 – on the figures provided as Attachment 1], can be lined up in several different configurations to provide power to those two buses, depending on what components are available in a given situation.

The documents discussed in this evaluation include electrical lineup diagrams; the PNPP Updated Safety Analysis Report (USAR); 10 CFR 50 Appendix A, General Design Criterion (GDC) 17, "Electric Power Systems;" PNPP Technical Specification Bases; and the NRC Safety Evaluation Report for PNPP (NUREG-0887).

Based on the following evaluation, it has been determined that the requirements in PNPP TS 3.8.1, "AC Sources – Operating," for having two qualified offsite sources can be met utilizing any two of the following three circuits:

1) Unit 1 Startup Transformer (SUT)
2) Unit 2 Startup Transformer (SUT)
3) Backfeeding through the Main and Auxiliary Transformers

Since the three PNPP circuits meet the licensing and design requirements, as shown in the following evaluation, it can be concluded that a "two-out-of-three" arrangement will meet the requirements of Technical Specification 3.8.1.

3.1.2 Licensing Basis Considerations - Technical Specifications

Technical Specification 3.8.1.a requires "two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electric Power Distribution System." The three sources described in the Technical Specification Bases are the path through the Unit 1 SUT, the path through the Unit 2 SUT, and backfeeding through the main and auxiliary transformer as depicted on Attachment 1 figures.

If one of the startup transformer sources of offsite power is out of service, backfeeding of the Unit 1 main and auxiliary transformers would be credited as a delayed access source of offsite power. It is available in sufficient time to prevent damage to fuel cladding and the reactor coolant boundary as validated by a time study [Reference 1].

The three possible offsite sources were described above. The Technical Specification Bases state that "Qualified offsite circuits are those that are described in the USAR and are part of the licensing basis for the unit." The

backfeed circuit is described in the USAR, as detailed below in Section 3.1.4. In 1994, during the development and review process for the PNPP Improved Standard Technical Specifications (iSTS), the term "physically independent" circuits that was used in the former TSs was replaced with "qualified" circuits in the iSTS specification. It was determined that these two terms were considered to have the same meaning, and although the wording changed, there was no change to the requirements. In 1996, along with the implementation of the PNPP iSTS, a TS Bases change added information regarding the backfeed circuit, using text taken directly from the NRC Safety Evaluation Report (SER) for PNPP (NUREG 0887). This change added clarity by including information from the original SER, and did not change the Technical Specifications.

3.1.3 Licensing Basis Considerations – USAR

USAR section 8.2 states that the offsite power system is the preferred source of power for the plant. This system includes the grid, transmission lines, transformers, switchyard components, and associated control system provided to supply electric power to safety related components and equipment. The electric grid is the source of energy for the offsite power system. The safety function of the offsite power system is to provide sufficient capacity and capability to ensure that the specified acceptable fuel design limits and design condition of the reactor coolant pressure boundary will not be exceeded, and to ensure that core cooling, containment integrity and other vital functions will be maintained in the event of postulated accidents as specified in GDC 17.

The three offsite supplies are currently described in USAR Section 8.2.

This section of the USAR also states "a motor operated main generator disconnect switch is provided to facilitate the availability of this [the backfeed] path." When the time study was performed the main generator disconnect switch was manually closed. The disconnect switch, in manual or automatic, allows the backfeed configuration to be put in place much more quickly than a bolted link connection.

The NRC SER for PNPP also recognized that three sources of offsite power are available. The SER described the path through the Unit 1 SUT, the Unit 2 SUT, and a method for powering the ESF buses by using the main and auxiliary transformers to feed either L11 or L12 and in turn feed L10.

3.1.4 Licensing Basis Considerations - 10CFR50, Appendix A, Criterion 17

10CFR50, Appendix A, Criterion 17 states the following:

Criterion 17—Electric power systems. An onsite electric power system and an offsite electric power system shall be provided to permit functioning of structures, systems, and components important to safety. The safety function for each system (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to assure that

(1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and
(2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

The onsite electric power supplies, including the batteries, and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure.

Electric power from the transmission network to the onsite electric distribution system shall be supplied by two physically independent circuits (not necessarily on separate rights of way) designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. A switchyard common to both circuits is acceptable. Each of these circuits shall be designed to be available in sufficient time following a loss of all onsite alternating current power supplies and the other offsite electric power circuit, to assure that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded. One of these circuits shall be designed to be available within a few seconds following a loss-of-coolant accident to assure that core cooling, containment integrity, and other vital safety functions are maintained.

Provisions shall be included to minimize the probability of losing electric power from any of the remaining supplies as a result of, or coincident with, the loss of power generated by the nuclear power unit, the loss of power from the transmission network, or the loss of power from the onsite electric power supplies.

The following demonstrates PNPP conformance to General Design Criterion 17.

Criterion 17—Electric power systems. An onsite electric power system and an offsite electric power system shall be provided to permit functioning of structures, systems, and components important to safety.

The Class 1E buses, and their associated equipment important to plant safety, can be powered from either offsite power through circuits connected to the switchyard or through the emergency diesel generators (EDGs) associated with each ESF bus.

The safety function for each system (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

A calculation entitled "PNPP Class 1E Power Distribution System Voltage Study" shows that either startup transformer, or the backfeed through the main and auxiliary transformers can provide sufficient capacity to mitigate a loss of coolant

accident (LOCA), which is the bounding postulated accident. The capability of the offsite power system is discussed in Section 3.1.5. The Class 1E EDGs have sufficient capacity and capability to mitigate a LOCA.

The onsite electric power supplies, including the batteries, and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure.

Divisional separation between each of the Class 1E ESF buses, EDGs, and batteries ensure independence. Having multiple divisions, and requiring only Division 1 or Division 2 to achieve and maintain safe shutdown provides redundancy. All required surveillance testing can be performed which satisfies the testability criterion.

Electric power from the transmission network to the onsite electric distribution system shall be supplied by two physically independent circuits (not necessarily on separate rights of way) designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. A switchyard common to both circuits is acceptable.

PNPP has three lines that traverse from the common switchyard to the onsite electrical distribution. These three are the Unit 1 startup transformer feed, the Unit 2 Startup Transformer feed, and the connection from the switchyard to the main and auxiliary transformers. Each of these is electrically separated from the other two.

Each of these circuits shall be designed to be available in sufficient time following a loss of all onsite alternating current power supplies and the other offsite electric power circuit, to assure that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded.

With a loss of all onsite AC power supplies (EDGs), and having only a single offsite supply (either the U1 SUT, the U2 SUT, or the backfeed through the main and auxiliary transformer), any single available offsite source would be able to assure that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded.

In the case where two startup transformers are available, either source is available within a few seconds in order to meet the requirement specified in GDC 17. This ensures all safety systems are available to maintain the specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded.

If a startup transformer and the backfeed through the main and auxiliary transformers are the two available offsite sources, and the startup transformer fails, a loss of AC power to the ESF buses and subsequent reactor scram and

turbine trip would occur. Operators would take manual action to align the ESF buses through the main and auxiliary transformer. This requires breaker manipulations, and opening a disconnect switch that isolates the main generator from the isolated phase bus. A time study indicates that bus power can be restored in approximately two hours [Reference 1].

In the backfeed case, direct power (DC) power would be available for reactor core isolation cooling system and manual safety relief valve operation, which will preclude fuel cladding and reactor coolant pressure boundary damage for four hours. Since this re-alignment to the backfeed source can be performed within the four hour capability of the DC system, the backfeed case meets GDC 17. Since each of the three offsite supplies have been shown to adequately assure acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded, the GDC 17 criterion have been satisfied.

One of these circuits shall be designed to be available within a few seconds following a loss-of-coolant accident to assure that core cooling, containment integrity, and other vital safety functions are maintained.

If two startup transformers are the available offsite supplies and a LOCA occurs, each of the transformers would be available to immediately supply power to any or all of the ESF buses. Therefore, each startup transformer would be available within a few seconds.

If a single startup transformer and the backfeed through the main and auxiliary transformers are the available offsite supplies, and a LOCA occurs, the startup transformer would be the immediate source for the ESF buses. The backfeed circuit is a delayed access source, and has been shown to meet the previous guidance regarding prevention of fuel damage.

Since at least one of the required sources is always available within a few seconds, all three offsite supplies meet GDC 17 and are considered to be qualified circuits. Therefore, this criterion is met.

Provisions shall be included to minimize the probability of losing electric power from any of the remaining supplies as a result of, or coincident with, the loss of power generated by the nuclear power unit, the loss of power from the transmission network, or the loss of power from the onsite electric power supplies.

Emergency diesel generator and switchyard component maintenance plans, grid operating procedures and normal electric lineups minimize the probability of losing electric power from any remaining supplies as a result of, or coincident with a unit trip, a loss of offsite power (LOOP), or a failure of the EDGs.

Based on the above discussion on each portion of GDC 17, the analysis shows that no exceptions to any GDC 17 criteria were taken. Therefore, PNPP fully complies with General Design Criterion 17.

3.1.5 Licensing Basis Considerations – Review of Conformance to GDC 17 as outlined in NUREG-0800, Revision 3

The following is a comparison of the three offsite supplies to the reviewer guidance in NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," (SRP). NUREG-0800 lists the review considerations and acceptance criteria for meeting GDC 17. The review will focus on those areas within NUREG-0800 Section 8.2, Item II.2 that relate specifically to GDC 17. The five acceptance criteria are listed as follows:

i) Capacity and capability to permit functioning of structures, systems, and components important to safety.

ii) Provisions to minimize the probability of losing power from any remaining supply as a result of loss of power from the onsite power system or loss of the unit generator.

iii) Physical independence.

iv) Capability to meet Regulatory Guide 1.32.

v) Acceptability of generator circuit breakers and generator load break switch.

SRP section 8.2, Item III.1, defines the review process as it relates to GDC 17. Eight specific areas are examined to ensure that the above listed acceptance criteria are satisfied. This summary evaluates the acceptance of the three offsite source configurations and their acceptability.

a) The electrical drawings should be reviewed to assure that at least two separate circuits from the transmission network to the onsite power distribution system buses are provided.

From the switchyard there are three separate supply lines to the onsite electrical distribution system. One is the feeder for the Unit 1 Startup Transformer, a second is the feeder for the Unit 2 Startup Transformer, and the third connects to the main transformer. Therefore, this criterion has been satisfied.

b) The routing of transmission lines should be examined on layout drawings to assure that at least two independent circuits from the offsite grid are available.

Under all conditions, any one of the three circuits that connect the offsite grid to the onsite electrical distribution system can be out of service, and two physically independent circuits will be available. Therefore, this criterion has been satisfied.

c) As the switchyard may be common to both offsite circuits, the electrical schematics of the switchyard breaker control system, its power supply, and the breaker arrangement itself should be examined for the possibility of simultaneous failure of both circuits from single events such as a breaker not operating during fault conditions, spurious relay trip, loss of a control circuit power supply or a fault in a switchyard bus or transformer.

Results from an analysis of switchyard components is contained in USAR section 8.2. Most component failures do not have a potential to isolate two offsite supplies. A failure of switchyard breaker, S611, however, could isolate the Unit 2 Startup Transformer as well as the backfeed capability. The offsite circuits are not designed to be single failure proof, and a common switchyard is recognized as an acceptable design. The failure of S611 is bounded by a failure of the Unit 2 Startup Transformer.

If either startup transformer and the backfeed through the main and auxiliary transformers are the two available offsite sources and the startup transformer fails, operators could take manual action to align the ESF buses through the main and auxiliary transformer (in order to remove reliance on onsite power supplies). This requires breaker manipulations, and opening a disconnect switch that isolates the main generator from the isolated phase bus.

A time study has been completed and has shown that bus power can be restored within approximately two hours. This time study simulated a loss of both startup transformers and a LOOP.

In the above case if onsite AC power supplies are not utilized, DC power would be available for reactor core isolation cooling (RCIC) system and manual safety relief valve operation which will preclude fuel cladding or reactor coolant pressure boundary damage for four hours. The design basis calculation does support that DC power will be available for at least four hours following a loss of AC ESF bus power. Since each of the three offsite supply re-alignments can be performed within the four hour capability of the DC system, each of the three offsite supplies satisfy this requirement. Additionally, an environmental calculation concluded that RCIC can function for the four hour timeframe. Probabilistic risk assessment studies also conclude that no cladding or reactor coolant pressure boundary damage will occur in this timeframe.

All other aspects of the control and relaying protection of these circuits are not susceptible to a single failure that would isolate both offsite supplies. Therefore, this criterion has been satisfied.

d) The design is examined to determine that at least one of the two required circuits can, within a few seconds, provide power to safety-related equipment following a loss of coolant accident. These circuits are not required to be single failure proof. However, it is required that each circuit have the capability to be available in sufficient time to prevent fuel design limits and design considerations of the reactor to be exceeded. For those units that utilize a backfeed path through the main generator step-up transformer, the reviewer must determine if this path is required to satisfy the GDC requirement for an immediate or delayed access circuit. If the circuit is required for delayed access, then the same determination as previously stated must be made, i.e. there is sufficient time to make the circuit available.

In the case where two startup transformers are available, either source would be available within a few seconds in order to meet the requirement specified in GDC 17.

In the case where a startup transformer and the backfeed through the main and auxiliary transformers are the two available offsite sources, the startup transformer would be available within a few seconds to mitigate a LOCA condition as required by GDC 17. In the event that a startup transformer fails, operators would take manual action to align the ESF buses through the main and auxiliary transformer. This requires breaker manipulations, and opening a disconnect switch that isolates the main generator from the isolated phase bus. A time study has been completed and has shown that divisional bus power from offsite sources can be physically restored within approximately two hours. Thus the backfeed circuit has the capability to be available in sufficient time to prevent fuel design limits and design considerations of the reactor to be exceeded (based on the above analysis that establishes a four hour capability of the onsite DC power supply to support operation to preclude fuel cladding or reactor coolant pressure boundary damage).

PNPP utilizes a backfeed option through the main generator step-up transformer as discussed above. Each of the startup transformers has been shown to adequately mitigate a LOCA event by supplying required loads. Furthermore, the GDC requires one of the two offsite power supplies to be able to align within a few seconds to power safety related loads for event mitigation. Therefore, since at least one of the sources is available within a few seconds, all three offsite supplies meet GDC 17 and are considered to be qualified circuits. Therefore, this criterion has been satisfied.

e) Each of the circuits from the offsite system to the onsite distribution buses should have the capacity and capability to supply the loads assigned to the bus or buses it is connected to during normal and abnormal operating conditions, accident conditions, or plant shutdown conditions. Therefore, the loads supplied during these conditions should be determined from information obtained in coordination with other branches.

A review of design information and analysis for the three offsite power circuits has been performed via a review of the applicable PNPP electrical calculations. These calculations review the loads that are required in all bounding plant configurations, including the backfeed case. Overall, the review concluded that power capacity is available with sufficient margin from all three sources with respect to these calculations. Therefore, this criterion has been satisfied.

f) The results of the grid stability analysis must show that the loss of the largest single supply to the grid does not result in the complete loss of preferred power. The analysis should consider the loss, through a single event, of the largest capacity being supplied to the grid, removal of the largest load from the grid, or loss of the most critical transmission line.

The results of the grid stability analysis are presented in USAR section 8.2. These results were performed for the original plant design in accordance with the above listed guidelines. A full load rejection is still the analyzed worst case condition for stability. The grid is demonstrated to show its capacity to withstand a full load rejection. Therefore, this criterion has been satisfied.

g) During the review of the electrical schematics, it should be determined that loss of standby power will not result in the loss of preferred power, loss of one preferred power circuit will not result in the loss of the other circuit, and loss of the main generator will not result in the loss of the other preferred circuit.

The three offsite supply configurations will not affect the standby power system (diesel generators), loss of one preferred power circuit will not result in the loss of the other circuit, and the loss of the main generator will not result in the loss of the offsite AC power circuit through either preferred power circuit. These electrical systems maintain their physical and electrical independence as originally designed and remain in compliance with GDC 17. Therefore, this criterion has been satisfied.

h) The preferred power system must be independent of the onsite power system. The basis for acceptance is that no single event, including a single protective relay, interlock, or switchgear failure, in the event of loss of all standby power sources, will prevent the separation of the preferred power system from the onsite power distribution system or prevent the preferred power system from accomplishing its intended function.

There is no active connection between the offsite and onsite sources, except during EDG testing. Therefore, no single failure could prevent separation or prevent safe shutdown capability. Therefore, this criterion has been satisfied.

As demonstrated through evaluation of the NUREG 0800 acceptance criteria, all three offsite supply configurations comply with the guidelines in GDC 17.

3.1.6 Licensing Basis Considerations – Regulatory Guides 1.32 and 1.93

Regulatory Guide 1.32, "Criteria for Safety Related Electric Power Systems for Nuclear Power Plants," February 1977, Revision 2, as well as Regulatory Guide 1.93, "Availability of Electric Power Sources," December 1974, Revision 0 were reviewed during development of this amendment request to determine if any concerns are raised due to any of the offsite supply configurations.

The introduction to Regulatory Guide 1.93 states that: "Nuclear power plants wherein only one of the two required offsite circuits can be made available within a few seconds following a LOCA are outside the scope of this guide." If only one startup transformer is available, and the backfeed configuration (delayed access source) is used as a qualified offsite supply, this Regulatory Guide does not apply.

Section B of the Regulatory Guide states:

GDC 17 specifies design requirements, not operating requirements; it therefore does not stipulate operational restrictions on the loss of power sources. Nevertheless, operational restrictions based on the intent of GDC 17 on the loss of power sources have been included in the Technical Specifications of recently licensed nuclear power plants. Such restrictions are based on the following assumptions:

The LCO of nuclear power plants is met when all the electric power sources required by GDC 17 are available.

Regulatory Guide 1.32, Position C.1.a states that:

A preferred design would include two immediate access circuits from the transmission network. Detailed guidance for operating procedures and restrictions acceptable to the staff, applicable where two immediate access circuits are available is contained in Regulatory Guide 1.93, "Availability of Electric Power Sources." An acceptable design would substitute a delayed access circuit for one of the immediate access circuits provided the availability of the delayed access circuit conforms to Criterion 17.

Thus, this Regulatory Guide is applicable when credit for the backfeed configuration is taken, and it presents the position that the delayed access circuit is an acceptable design as long as it meets GDC 17.

As described above in the discussions of Regulatory Guide 1.93, plants that operate with two immediate access offsite circuits would find RG 1.93 directly applicable to the Completion Times provided in their Technical Specifications. However, as noted in Regulatory Guide 1.32 and in RG 1.93, the Completion Times in RG 1.93 regarding offsite circuits are not necessarily applicable if operating with only one delayed access offsite source. A shorter Completion Time could be applied. A temporary change to the PNPP Technical Specification 3.8.1 is being requested to shorten the time allowance for operation in such a configuration from the standard 72 hours to 24 hours. This could be considered to be a more conservative ACTION, although it provides less time to restore an inoperable offsite source, and therefore may result in a forced plant shutdown transient during a time period when limited offsite power is available to support the shutdown evolution.

As shown in the previous section, the three offsite supply configurations satisfy the Standard Review Plan (NUREG 0800) criteria for GDC 17 and the General Design Criteria 17 itself. Since the three offsite access circuits comply with the recommendations of Regulatory Guide 1.32, as applicable, and each of the three offsite circuits are qualified, it can be concluded that a "two-out-of-three" configuration will satisfy the requirements of the limiting condition for operation for Technical Specification 3.8.1.

3.1.7 Impact on USAR Accident Analyses

There are four USAR events potentially affected by the three offsite supply configurations. The events are "Loss of Auxiliary Transformer" (USAR 15.2.6); "Loss of Grid Connections," also referred to as a loss of offsite power (LOOP) (USAR 15.2.6); the "Design Basis Loss of Coolant Accident (LOCA)" (USAR Sections 6.2 and 15.6); and "Station Blackout (SBO)" (USAR Appendix 15H).

The loss of auxiliary transformer event is a moderate frequency transient. As a moderate frequency event, defined as an "anticipated operational occurrence," a failure beyond that which initiated the event is not required to be assumed per USAR 15.0.3.2.1.1. Therefore, with the exception of the system/component that initiated the event, reliance can be placed upon the other systems and components to properly function as designed.

The cause of the loss of auxiliary transformer event ranges from the operation of the transformer protection circuitry to operator error. Offsite power is used to provide power to the systems and components necessary to mitigate the consequences of the event. Since the event assumes the normal functioning of plant systems and components, only one independent circuit of offsite power is required. As stated above, additional failures are not required to be postulated, so availability of additional power sources are not required. The event does not impact the integrity of any of the fuel cladding or reactor coolant pressure boundary.

As discussed in USAR 15.2.6, the LOOP event is a moderate frequency event. Loss of all grid connections can result from major shifts in electrical loads, loss of loads, lightning, storms, wind, and so forth, which contribute to electrical grid instabilities. These instabilities will cause equipment damage if unchecked. Protective relay schemes automatically disconnect electrical sources and loads to mitigate damage and regain electrical grid stability. For the USAR event, the onsite power supplies are used to provide power to the systems and components necessary to mitigate the consequences of the event. The event does not impact the integrity of any fuel cladding or the reactor coolant pressure boundary. No fuel failures occur. As the event itself eliminates the offsite sources, no credit is taken for the use of offsite power for any mitigation activities.

The design basis LOCA event is postulated concurrent with a LOOP. The initiator of the LOOP, in this circumstance, is not defined. For this USAR event, the onsite power supplies are used to provide power to the systems and components necessary to mitigate the consequences of the event. As the event itself eliminates the offsite sources, no credit is taken for the use of offsite power for any accident mitigation activities. The consequences of a LOCA, therefore, are not affected by the availability, or lack thereof, of the offsite power sources.

The SBO event assumes a loss of the grid coupled with the failure of the division 1 and 2 diesel generators. The cause of the loss of the grid would be similar to that described under the LOOP event. The SBO event itself eliminates the offsite sources. Hence, no credit is taken for their use in accident mitigation

activities. The consequences of the SBO, therefore, are not affected by the availability, or lack thereof, of the offsite sources.

A review of the NRC Safety Evaluation Report for PNPP which addressed compliance with the Station Blackout rule, and a review of Regulatory Guide 1.155 concluded that this temporary technical specification change affects the criteria to meet the 4 hour coping strategy cited in the PNPP USAR. The failure of a startup transformer would result in a change in the independent offsite power category (from I-2 to I-3) and therefore a change in the offsite power design characteristic (from P1 to P2); however, since PNPPs diesel reliability is now demonstrated at 0.975, PNPP remains a 4-hour coping strategy plant (P1)

Therefore, there are no adverse effects upon the existing USAR accident analyses.

3.2 Design Considerations

3.2.1 Background

Preferred power from the offsite power sources to the Class 1E buses is from the startup transformers as depicted in Attachment 1. The startup transformer takes power from the transmission yard at 345 kV and steps it down to 13.8 kV. At the 13.8 kV level, voltage is further stepped down to 4.16 kV at interbus transformer LH-1-A where it is utilized for the Class 1E buses. One secondary winding of the Unit 1 interbus transformer LH-1-A feeds the Unit 1, 4.16 kV Class 1E buses. The other secondary winding of the interbus transformer feeds the Unit 2 4.16 kV Class 1E bus as the alternate source.

Similarly, the Unit 2 interbus transformer (LH-2-A) has the capability of providing power to Unit 1 or the Unit 2 Class 1E 4.16 kV buses.

An alternate path of receiving power from the 345 kV switchyard to the plant is also provided. This is by backfeeding through the Unit 1 auxiliary and main transformers. The Unit 1 main transformer's primary function is to supply power from the turbine generator to the grid. The main generator generates power at 22 kV. The main transformer steps up this voltage to levels of the transmission system (345 kV). Power can also be provided in the opposite direction through the main transformer, thus stepping the voltage down from 345 kV to 22 kV for use in the plant via the auxiliary transformer.

The auxiliary transformer is typically used to provide power to the auxiliary loads in the plant. The auxiliary transformer steps down voltage from 22 kV at the main generator to 13.8 kV for use on buses L11 and L12 during normal operation.

Each startup transformer and the auxiliary transformer is capable of supporting the worst case loading scenario as evaluated in the plant electrical loading calculations.

3.2.2 Power Systems Analysis Calculations

Calculations have been performed to demonstrate the adequacy of the three offsite supply configurations to deliver power to the Class 1E safety related buses. These calculations have evaluated the load flow, electrical protection, ampacity, short circuit availability, and voltage drops to downstream equipment.

A calculation analyzed the backfeed of bus L10 from bus L11 or L12. The calculation demonstrates the capability of the backfeed configuration to supply adequate voltage to safety related equipment while maintaining operation from the offsite supply circuit under design basis accident conditions. The calculation utilized the pre and post-LOCA electrical loads. These loads represent the worst-case loads when utilizing the backfeed configuration in response to a design basis accident or plant operation at reactor power. A calculation evaluated bus fault duties when in the backfeed configuration. The results indicate that the existing protective relay coordination for circuit breaker L1006 and L1009 protective relay setpoints, is acceptable.

Therefore, electrical calculations have adequately demonstrated the ability of the safety related equipment to perform their functions when powered from either startup transformer, or the backfeed through the main and auxiliary transformers.

3.3 Operation and Maintenance Considerations

3.3.1 Predictive and Preventive Maintenance

The following addresses the overall condition of the switchyard and its preventive maintenance.

The general overall, current, condition of the PNPP switchyard is summarized in the quarterly system health report (second quarter 2011) as being excellent. There are no corrective or deficient orders, no capability factor loss or outage extensions, no open deferred preventive maintenance (PM) or PM deep in grace for critical components, no obsolete critical components without spares, no predictive maintenance issues on critical components, and no open significant condition adverse to quality condition reports. There are no issues that could result in power changes or equipment inoperability or forced losses.

The general long term overall condition of the switchyard and its preventive maintenance is identified and maintained in the FENOC document, "Life Cycle Management Switchyard – Perry." The switchyard is rated as "acceptable" in the life cycle management plan with proposed refurbishments and/or replacements "ensuring reliability" until the year 2046.

The procedure, "Grid Reliability Protocol," covers access and authorization to perform work in the switchyard. The rounds are performed weekly by Operations. The FirstEnergy Northern Region performs rounds monthly.

As dictated by procedure, personnel access and work activities within the switchyard are controlled and carefully performed. Authorization from the Shift Manager or designee is required for switchyard entry. Any entrance has a posted placard with stop signs and a requirement to contact the control room to receive permission for entry. Vehicle and personnel access gates remain locked and closed except when personnel are entering or exiting the switchyard. Personnel exiting the switchyard are required to lock the gate and immediately provide notification to the control room or security of the gate status.

Trained Plant personnel make generic rounds to observe switchyard equipment. Steps within NOP-OP-1003 address switchyard alarm responses. Any abnormal condition or activities identified are to be reported to shift management immediately, and entered into the FENOC corrective action program if warranted. The Shift Manager shall respond to provide immediate assessment or assistance as needed.

Preventive maintenance is performed in accordance with the preventive maintenance template, "Switchyard." This procedure enforces the following activities to support the health of the switchyard:

- Performance Monitoring
  - Engineering System Inspections, monthly.
  - Substation Maintenance Inspections, monthly.
- Predictive Maintenance
  - Thermography every six months and also three months prior to a refueling outage and three months after a refueling outage.
- Preventive Maintenance
  - Relay Calibration / Testing
  - Battery Health Testing
  - Pilot Cell float Voltage
  - Pilot Cell Specific Gravity
  - Pilot Cell electrolyte Level
  - Pilot Cell Temperature
  - Battery Terminal Voltage
  - Specific gravity 10% of cells
  - Electrolyte levels 10% of cells
  - Electrolyte temperature 10% of cells
  - Float voltage of each cell and battery terminal voltage
  - Specific gravity all cells
  - Check battery inter-cell resistance
  - Charger Output Current
  - Charger Output Voltage
  - Unintentional Grounds
  - Perform Battery Capacity Test
  - Battery Performance Testing (Capacity Test)
  - Disconnect Switches Test – Motor/Manual

  - Lightning Arresters Inspection
  - Power Circuit Breaker Seasonal Inspection
  - Power Circuit Breaker Two Year Inspection
  - Power Circuit Breaker Diagnostic Inspection
  - Power Circuit Breaker Complete Inspection
  - Power Circuit Breaker Compressor Inspection
- Preventive Replacement
  - Capacitor Potential Device Replacement
  - Battery Replacement

Preventive maintenance is performed on a frequency that varies by component and is fully compliant with all Nuclear Electric Insurance Limited (NEIL) requirements. Preventive replacement is driven by the preventive maintenance testing. However these identified items in general have life spans much shorter than plant life. For example, it is expected that the service life of flooded lead acid batteries is 20 years. Annual performance testing for the batteries would be required if the battery shows signs of degradation or has reached 85% of its service life (approximately 17 years). PNPP has chosen to replace the batteries at this period instead of performing the testing. It should be noted that PNPP has recently replaced these batteries.

The following provides details regarding the predictive and preventive maintenance activities associated with the switchyard components

Predictive maintenance is identified through the use of thermography, which is performed by plant personnel as a time based activity every six months and also performed after opening and closing high voltage disconnect switches and during periods when increased loading is experienced. Thermography is performed separately by substation maintenance personnel every two years for outdoor and three years for indoor equipment.

The following is a list of specific preventive maintenance activities associated with the switchyard components.

Relay Calibration/Testing: This activity inspects for proper relay connection points and removes the relay to perform a calibration in accordance with the latest relay setting sheets. A functional test is performed to demonstrate overall operation of the protective scheme by tripping the breaker/switch at least one time. FirstEnergy Substation Preferred Practices Manual contains a checklist of inspection items. NEIL required frequency for this activity is four years.

Battery Health Testing: The following parameters are tested and recorded for this activity.

- Pilot cell float voltage
- Pilot cell specific gravity
- Pilot cell electrolyte level

- Pilot cell temperature
- Battery terminal voltage
- Specific gravity 10% of cells
- Electrolyte levels 10% of cells
- Electrolyte temperature 10% of cells
- Float voltage of each cell and battery terminal voltage
- Specific gravity all cells
- Check battery inter-cell resistance
- Charger output current
- Charger output voltage
- Unintentional grounds.
- Perform battery capacity test
- NEIL required frequency to receive credit is quarterly.

Battery Performance Testing: A battery discharge performance test is to be performed in accordance with IEEE-450 to determine capacity is greater than 80%. NEIL required frequency to receive credit is every five years. Replacement of the battery shall occur within one year of determining less than 80%.

Disconnect Switch Test: This complete functional test performs a variety of activities on the switch mechanism. This activity includes functional testing and lubrication. The FirstEnergy Substation Preferred Practices Manual contains a checklist of inspection items.

Lightning Arrester Inspection: The FirstEnergy Substation Preferred Practices Manual contains the inspection items.

Seasonal Inspection: This activity is performed on GE Type ATB and ITE SF6 circuit breakers to ensure that they are functional for cold weather operation.

Two Year Inspection: This activity is performed on GE ATBs and oil circuit breakers and ensures that the active mechanisms are working properly. This activity performs the NEIL requirement for external Inspection for GE ATB, Westinghouse SFA and oil circuit breakers. In addition, the NEIL requirement for insulation medium moisture test for oil circuit breakers is satisfied.

Diagnostic Inspection: This inspection performs a variety of activities on the breaker, mechanism, alarms and controls. This activity includes functional testing and lubrication. This activity also performs the NEIL requirement for external inspection for ITE SF6 Circuit Breakers at a four year periodicity.

Complete Inspection: This inspection is typically performed on all three types of circuit breakers that essentially overhauls the breaker. A full timing/travel set of tests are performed. This activity performs the NEIL requirement for internal inspection for oil circuit breakers of 10 years periodicity, and 15 years periodicity for gas circuit breakers.

Capacitor Potential Device (CPD) Replacement: There is considerable operating experience in the nuclear industry that supports replacement of CPDs. Vendor and industry reliability predictions all converge to a 20-25 year average life. Modern units are insulated with polypropylene film, high-purity kraft paper and synthetic oil that should be more reliable and less prone to catastrophic failures in the future.

Battery Replacement: Per IEEE Std 450-1995, the recommended practice is to replace the battery if its capacity as determined per station procedures is below 80% of the manufacturer's rating. Also, prior to selecting the replacement battery, it is prudent to review the battery sizing calculation per IEEE Std 485-1997 to ensure the calculation is still valid for the new battery's characteristics and any load changes.

The preventive and corrective maintenance history for the major components that comprise the backfeed lineup is included as Attachment 3.

3.3.2 Operational History

The backfeed line-up has been used in the past as a source of offsite power, most recently in 2005.

3.3.3 Associated Procedures

The procedures for establishing a backfeed line-up are listed below. The primary procedure "Off-Site Power Restoration," was revised on September 30, 2011 following a walk through of the procedure on September 29, 2011. The procedure was revised again with an effective date of October 10, 2011. The intent of the revisions were to improve the timeliness of the re-energization activities.

Supporting Procedures:	Effective Date
1. "Loss of AC Power"	July 1, 2011
2. "Off-Site Power Restoration"	October 10, 2011
3. "Yard inspection"	September 30, 2011
4. "Bus EH11 Preparation"	November 23, 2004
5. "Bus EH12 Preparation"	April 15, 2011
6. "Bus EH13 Preparation"	November 23, 2004

There are other instructions aligning the backfeed under normal versus transient or off-normal conditions.

The following sequence of actions is taken, assuming loss or unavailability of either startup transformer. Section 1 of the offsite power restoration procedure

verifies availability of the back feed power source through either Breaker S610 or S611.

A walkdown/inspection of the transmission and transformer yards including main and auxiliary transformers is performed prior to energizing, and the generator disconnect switch (S111) is opened.

Section 2 of the offsite power restoration procedure verifies alignment of the in-plant electrical system and ensures that the plant is ready to restore power to the high voltage buses. Large load or feeder breakers are tripped from the control room. Auxiliary bus transfer switches in the control room are aligned to support a back feed lineup.

Section 3 of the offsite power restoration procedure restores power to the high voltage buses. Power is aligned from the switchyard, through the main and auxiliary transformers, to either bus L11 or L12, to bus L10 and Interbus transformer LH-1-A. This makes power available for connection to the safety buses EH11, EH12 and EH13, which are prepared to be energized by the final three procedures listed above.

3.4 Risk Considerations

3.4.1 Risk Assessment

The PNPP probabilistic risk analysis (PRA) model has been formally peer reviewed in 1997, and has also undergone multiple internal self assessments, with the most recent Self-Assessment in 2008 with contractor support and with respect to the ASME RA-Sb-2005 PRA Standard. Following the latest update to the average-maintenance model, the model is judged to meet Capability Category II for all supporting requirements regarding Level 1 Internal Events only, with the exception of internal flooding. Additionally, the latest model update has been performed to meet the Supporting Requirements for Level 1 Internal Events minus internal flooding for the latest revision of the PRA Standard, ASME/ANS RA-Sa-2009. The model does not currently address LERF, Internal Flooding, Fire, Seismic, or External Events.

In order to support the proposed temporary license amendment, a probabilistic risk assessment with one startup transformer unavailable was conducted by determining the incremental conditional core damage probability (ICCDP) for a two-month (60 day) period while in this configuration.

The acceptance criteria established in Regulatory Guide (RG) 1.177 states that a request to change Technical Specifications is acceptable if risk management actions are in place, the ICCDP is less than 1E-5 and incremental conditional large early release probability (ICLERP) is less than 1E-6.

In order to assess the risk up to 60 days, the average maintenance model was used to determine the maximum allowable ICCDP.

FENOC analysis applied the same methodology that would be used for a risk-informed technical specification amendment. Therefore, it bounds the proposed temporary license amendment. The analysis determined that the ICCDP for a 60-day emergency Technical Specification change will be 4.37E-7 with the Unit 1 startup transformer unavailable. The calculated ICCDP is less than the limit of 1E-5 given in RG 1.177.

ICLERP was not quantitatively evaluated; however, since ICCDP is less than 1E-6 and core damage is a prerequisite to a large early release, ICLERP will also be less than 1E-6.

The following assumptions were utilized for the risk assessment:

- When the Unit 1 Startup Transformer is unavailable, L10 and L20 will both be powered via the Unit 2 Startup Transformer during power operations. The backfeed lineup to provide an alternate offsite power lineup would only be used following a plant trip in the event of a failure of the Unit 2 Startup Transformer. The risk of losing the available startup transformer is therefore assumed to be accurately provided by a Bayesian update of industry failure rate with PNPP-specific plant historical performance data.

- The analysis did not consider an increase in the frequency of a plant centered LOOP when operating in a configuration with only one startup transformer. The frequency for a plant-centered LOOP is based on industry-wide historical data (which includes plants with a single startup transformer) adjusted by PNPP-specific plant historical data. However, a sensitivity study was conducted in the assessment and found the change in risk to be very small.

- The backfeed lineup is not credited in the PRA model following a loss of the startup transformer. This is a conservative treatment.

- All other assumptions from the average maintenance model remain valid for this assessment (e.g., the diesel generators availability are based on the PRA average maintenance model which includes the probability of a maintenance unavailability).

The Top 50 cutsets were reviewed. No significant change in the core damage sequences or cutsets exist based on the addition of the Unit 1 Startup Transformer being unavailable.

The initiating event frequency for a plant-centered LOOP is based on one event in 724.3 reactor years of industry operation in NUREG CR-6928. This data includes plants that only have a single startup transformer. This analysis assumed that the

plant-centered LOOP frequency was not affected by operating in a single transformer lineup. Transformer failure rates are significantly higher after being de-energized and re-energized, and the Unit 2 Startup Transformer has remained energized for a prolonged period of time. In addition, compensatory actions will monitor the health of the Unit 2 Startup Transformer and degradation indicating a potential failure should result in a controlled unit shutdown. A sensitivity study was performed to assess the impact of increasing the plant-centered loss of offsite power frequency to 1E-1/year. In this case, the average maintenance model CDF was 7.61E-6 which gives a ICCDP over 60 days of 5.5 E-7. This value is below the ICCDP limit of 1E-5 when compensatory actions are in place. Since LERF is contingent upon core damage, ICLERP will also be less than 1E-6 in this case, and the requirements in RG 1.177 are met.

3.4.2 Compensatory Measures to Reduce Risk

The following compensatory actions will be taken, to limit the risk associated with the use of the backfeed configuration, for the duration of the temporary license amendment.

1. A protected area will be established around the Unit 2 Startup Transformer and associated cabling, buses, and switchgear, in accordance with "Protected Equipment Postings," to ensure that no work will be conducted in the vicinity of these components that could affect this electrical capability.

2. A daily inspection will be conducted to ensure no loose equipment or debris is in the vicinity of the Unit 2 Startup Transformer that could be picked up by high winds.

3. Daily communication will be conducted with the system control center (SCC) to ensure grid stability is maintained and any potential issues are communicated to the plant for awareness purposes. No unnecessary switchyard work will be performed. This means work will be restricted to those activities necessary to maintain switchyard reliability.

4. There will be operators assigned each shift to respond to a plant-centered LOOP event and briefed on their specific actions to be taken in the event of a loss of the Unit 2 Startup Transformer while switchyard power is available.

5. The health of the Unit 2 Startup Transformer will be monitored on a regular basis and degradation indicating a potential failure will result in a controlled shutdown.

6. RCIC will be posted and protected in accordance with "Protected Equipment Postings."

The above compensatory actions will be controlled as Regulatory Commitments to ensure compliance.

3.5 Electrical Transient Analyzer Program Considerations

Can electrical system parameters be met using the backfeed (transient and accident)?

The backfeed case can support all expected plant loading conditions while maintaining required system parameters. This includes transient and accident loading conditions. The voltage analysis results for the backfeed case show that the ESF buses (EH11, EH12, and EH13) will have higher voltage (approximately 30 volts) using the backfeed lineup than that of using a startup transformer.

In the backfeed alignment, will the current transformers (CTs) on the auxiliary transformer be in the correct polarity? Does the auxiliary transformer have bidirectional relays?

Under normal operation, the auxiliary transformer steps down voltage from the 22 kV isolated phase bus to the non-safety 13.8 kV buses. Power current flows from the 22 kV winding to the 13.8 kV winding. During the backfeed lineup, the auxiliary transformer is still used in a step down capacity, and power/current flows from the 22 kV to the 13.8 kV winding. Since power flows in the same direction in both normal and backfeed configurations, the CTs will be the correct polarity, and bidirectional relays are not required.

During the backfeed configuration, the generator step-up transformer (GSU) has power flowing in the opposite direction than it would during normal operation. For this transformer, it has neutral time overcurrent protection (51NT) on each winding, and a transformer differential relay (87T). There are no polarity issues associated with the CTs, since they are AC current devices. Also, the protective relays associated with the GSU are not direction specific. Therefore, no CT or relay manipulations are required to put the backfeed configuration in service.

What are the protection schemes for the auxiliary transformer?

The auxiliary transformer primary protection consists of neutral time overcurrent relays (51NT), and time overcurrent relays (51) on each secondary winding. The auxiliary transformer is also protected by a transformer differential relay (87T). In addition, a sudden pressure relay (63), that is internal to the transformer, trips the transformer and a thermal relay (49).

The impedance through the main transformer is likely to be substantial. With degraded/minimum grid voltage, what are the consequences through the backfeed?

With the grid at minimum voltage, and the postulated LOCA loading, the results of the voltage analysis for the backfeed case show that the ESF buses will have higher voltage (approximately 30 volts) using the backfeed lineup than that of using a startup transformer. The backfeed line up takes into account the GSU impedance.

The design must be able to utilize the same tap settings for degraded voltage.

No tap changes are credited in the backfeed configuration. The taps for all transformers remain the same in all lineup configurations.

Does reliance on the delayed access source have any impact on the SBO analysis?

No. The SBO battery calculation assumes a minimum of four hours without any offsite source or the Division 1 and Division 2 EDG. The SBO battery capacity calculation would not be impacted by having a delayed source that takes up to four hours to implement. The backfeed can be implemented in approximately two hours based upon a time study. Therefore reliance on the delayed access source has no impact on the SBO analysis.

Provide a summary of the loads analysis for the backfeed (ETAP analysis). What is the limiting case? Were accident loads considered?

The voltage analysis for the backfeed case used post-LOCA plant loading. This is the most limiting loading condition. It is identical loading to that of the motor starting analysis case which utilized the Unit 1 Startup Transformer. The analysis summary shows that under identical loading conditions, the backfeed configuration has higher voltages than when using the startup transformer.

Can the motor operated disconnects be operated from the control room?

The main transformer disconnect, S112, is designed to be opened electrically from the control room, but cannot be closed electrically from the control room. S112 is designed to be electrically opened and closed locally. Additionally, S112 can be opened and closed locally with a hand crank.

The generator disconnect, S111, is designed to be opened and closed electrically from the control room. S111 is designed to allow it to be electrically opened and closed locally. Additionally, S111 can be manually opened and closed locally.

The electrical operating mechanism on S111 is not fully functional at this time. Actions to repair the electrical operating mechanism are in progress. The recent validated activities for establishing the backfeed electrical alignment have assumed manual operation of the main generator disconnect S111.

Summarize the number of lines entering the switchyard.

There are four lines that enter from outside the PNPP to the switchyard. These lines come from Ashtabula-Erie, Harding, Inland, and Eastlake.

There are three lines that enter the switchyard from the PNPP. These three include the line feeding the Unit 1 Startup Transformer, the Unit 2 Startup Transformer, and the line connecting from the switchyard to the main transformer. All of these lines are described in USAR section 8.2.

3.6 Defense in Depth

Under certain plant conditions, the Division 3 High Pressure Core Spray (HPCS) Diesel can be manually crosstied to either Division 1 or Division 2 to supply power to selected loads. In general the HPCS Diesel has sufficient extra capacity that it can be used to close Division 1 motor-operated gate valves in the Feedwater system, and Division 2 containment isolation valves when crosstied. Also, the Unit 1 and Unit 2 batteries (both Division 1 and Division 2) can be crosstied (same division, different unit) in some cases. This provides additional battery capacity for DC powered systems such as reactor core isolation cooling, and manual safety relief valve operation.

3.7 Results and Conclusions

Based on the above evaluation, it has been shown that the requirements in PNPP's Technical Specification (TS) 3.8.1, "AC Sources – Operating," for having two offsite sources can be met with any two of the following three circuits:

1) Unit 1 Startup Transformer (Unit 1 SUT)
2) Unit 2 Startup Transformer (Unit 2 SUT)
3) Backfeeding through the Main and Auxiliary Transformers

Since PNPP's three circuits meet the licensing and design requirements, including the backfeed configuration, it can be concluded that a "two-out-of-three" configuration will satisfy the requirements of the limiting condition for Technical Specification 3.8.1 during the temporary period of 60 days.

4.0 REGULATORY EVALUATION

4.1 Significant Hazards Consideration

An evaluation has been performed with respect to whether a significant hazards consideration is involved with the proposed amendment, by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response: No.

   The proposed amendment involves the use of a backfeed electrical alignment to meet the requirements of TS 3.8.1 for maintaining the availability of offsite power. The amendment maintains the reliability and redundancy of offsite AC electrical sources required by GDC 17, involves no changes to plant equipment design, and creates no accident initiator. Therefore, there is no significant impact on the probability of a previously evaluated accident.

   As required by GDC 17, the backfeed circuit is designed to be available in sufficient time following a loss of all onsite alternating current power supplies and the other offsite electric power circuit, to assure that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded. The other circuit necessary to meet the LCO is designed to be available within a few seconds following LOCA to assure that core cooling, containment integrity, and other vital safety functions are maintained. The amendment maintains the guidelines of GDC 17. Therefore, the proposed Technical Specification change does not involve a significant increase in the consequences of an accident previously evaluated.

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

   Response: No.

   The proposed amendment involves the use of a backfeed electrical alignment to meet the requirements of TS 3.8.1 for maintaining the availability of offsite power. The amendment maintains the reliability and redundancy of offsite AC electrical sources required by GDC 17, involves no changes to plant equipment design, and creates no accident initiator. Therefore, the proposed Technical Specification change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   Response: No.

   The proposed amendment involves the use of a backfeed electrical alignment to meet the requirements of TS 3.8.1 to maintain the availability of offsite power. The amendment maintains the reliability and redundancy

of offsite AC electrical sources required by GDC 17 and involves no changes to plant equipment design. Therefore, the proposed Technical Specification changes do not involve a significant reduction in margin of safety.

Based on the above, it is concluded that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

4.2 Applicable Regulatory Guidance/Criteria

Discussions of the applicable Regulatory Guidance/Criteria are provided above in Section 3.1. They are not repeated here.

4.3 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the temporary amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed temporary amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. PSTG-0041, "An Analysis of the Design and Licensing Basis for Technical Specification 3.8.1, AC Sources – Operating," Revisions 0 and 1

2. Perry Nuclear Power Plant Updated Safety Analysis Report

3. NUREG-0887, "Safety Evaluation Report related to the operation of Perry Nuclear Power Plant, Unit 1 and 2," dated May 1982

4. NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants, LWR Edition," Revision 3

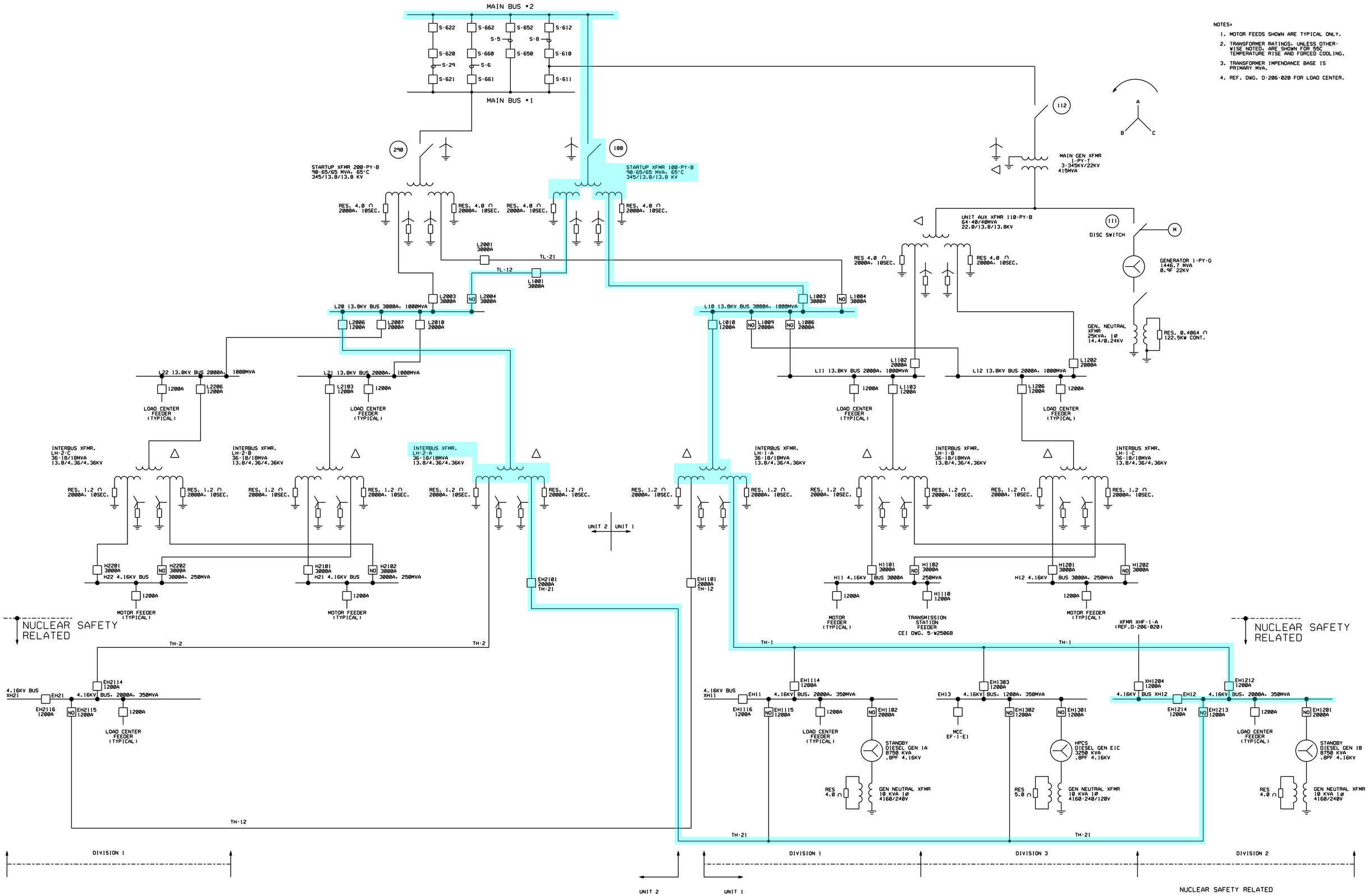
5. Regulatory Guide 1.32, "Criteria for Safety Related Electric Power Systems for Nuclear Power Plants," Revision 2

6. Regulatory Guide 1.93, "Availability of Electric Power Sources," Revision 0

7. 10 CFR 50 Appendix A, General Design Criterion (GDC) 17, "Electric Power Systems"

8. PSTG-0001, "PNPP Class 1E Power Distribution System Voltage Study," Revision 5

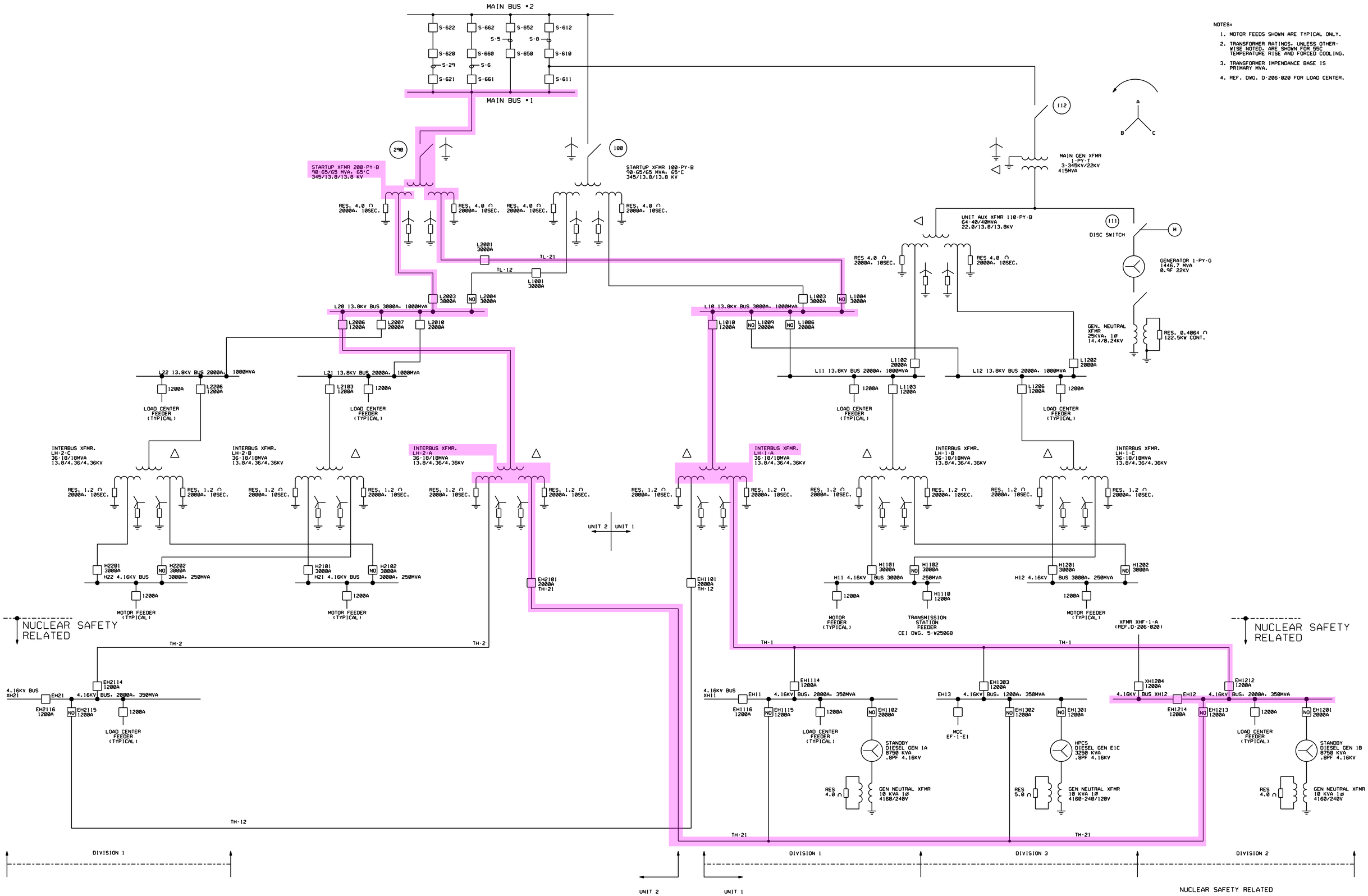
Attachment 1
Main One Line Diagram 13.8 kV and 4.16 kV
(Three Pages Follow)



NOTES:

1. MOTOR FEEDS SHOWN ARE TYPICAL ONLY.
2. TRANSFORMER RATINGS, UNLESS OTHERWISE NOTED, ARE SHOWN FOR 55C TEMPERATURE RISE AND FORCED COOLING.
3. TRANSFORMER IMPENDANCE BASE IS PRIMARY MVA.
4. REF. DWG. D-206-020 FOR LOAD CENTER.

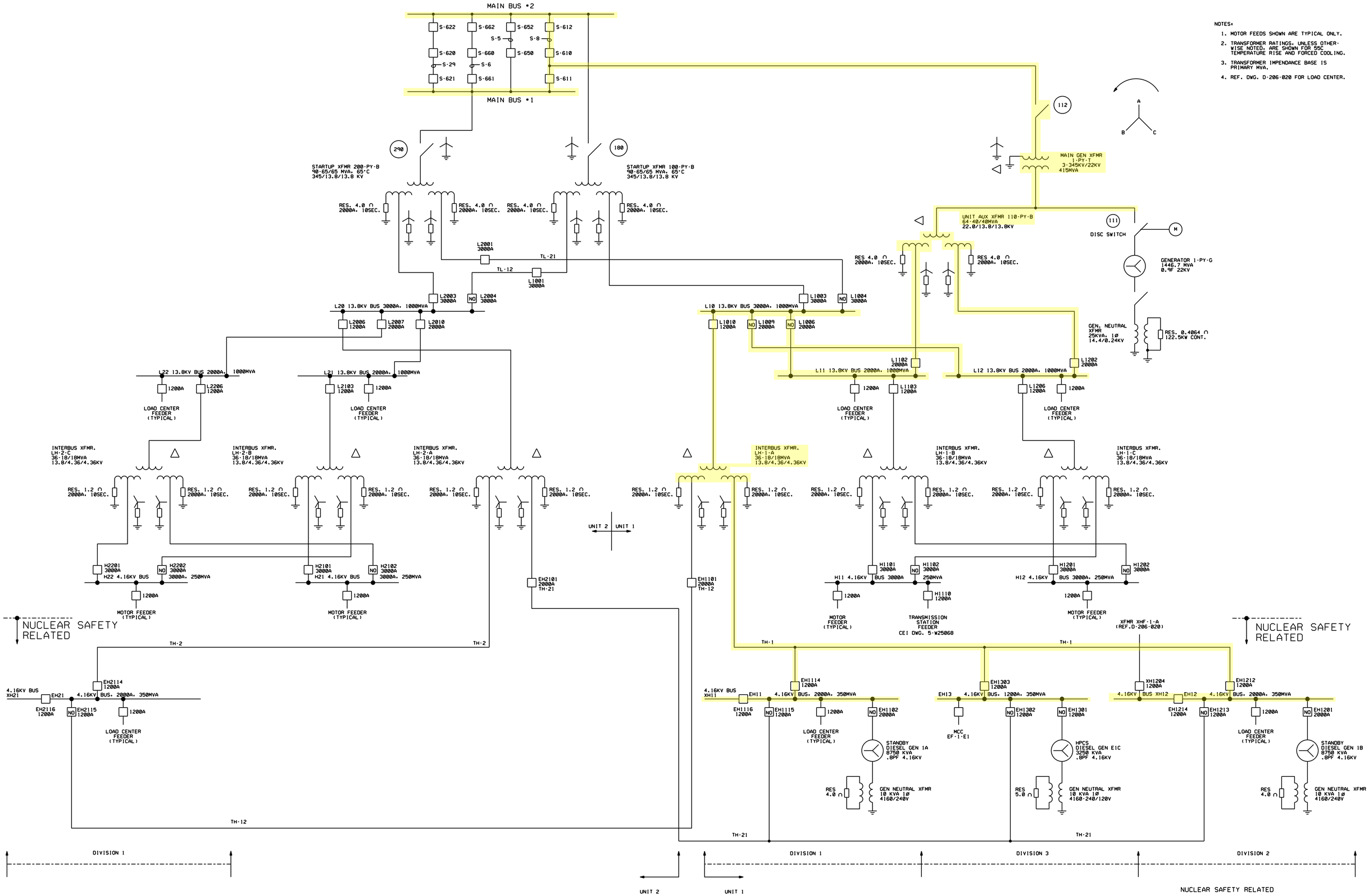
UNIT 1 START-UP XFMR PATH



NOTES:

1. MOTOR FEEDS SHOWN ARE TYPICAL ONLY.
2. TRANSFORMER RATINGS, UNLESS OTHERWISE NOTED, ARE SHOWN FOR 55C TEMPERATURE RISE AND FORCED COOLING.
3. TRANSFORMER IMPENDANCE BASE IS PRIMARY MVA.
4. REF. DWG. D-206-020 FOR LOAD CENTER.

UNIT 2 START-UP XFMR PATH



BACK FEED XFMR PATH

Attachment 2
Proposed Technical Specification Changes (Mark Up)
(Two Pages Follow)

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources-Operating

LCO 3.8.1 The following AC electrical power sources shall be OPERABLE:

a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electric Power Distribution System; and

b. Three diesel generators (DGs).

---NOTE---
Until December 12, 2011, one of the qualified offsite circuits may be a delayed access circuit.

APPLICABILITY: MODES 1, 2, and 3.

---NOTE---
Division 3 AC electrical power sources are not required to be OPERABLE when High Pressure Core Spray System is inoperable.

ACTIONS

---NOTE---
LCO 3.0.4.b is not applicable to DGs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for OPERABLE required offsite circuit. AND	1 hour AND Once per 8 hours thereafter (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Restore required offsite circuit to OPERABLE status.	72 hours AND 24 hours from discovery of two divisions with no offsite power AND 24 hours from discovery that only OPERABLE circuit is a delayed access circuit AND 17 days from discovery of failure to meet LCO
B. One required DG inoperable.	B.1 Perform SR 3.8.1.1 for OPERABLE required offsite circuit(s). AND B.2 Declare required feature(s), supported by the inoperable DG, inoperable when the redundant required feature(s) are inoperable. AND	1 hour AND Once per 8 hours thereafter 4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)

(continued)

Attachment 3
Delayed Access Circuit (Backfeed Configuration)
Components Maintenance History
(24 Pages Follow)

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1R22Q0033A	A' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1010 which is the supply for interbus transformer LH-1-A	10/30/2006	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0033B	B' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1010 which is the supply for interbus transformer LH-1-A	11/01/2006	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0033C	C' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1010 which is the supply for interbus transformer LH-1-A	11/02/2006	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0203F	C' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1202 which is the supply from Unit 1auxiliary transformer	03/29/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0203E	B' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1202 which is the supply from Unit 1 auxiliary transformer	03/30/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0203D	A' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1202 which is the supply from Unit 1 auxiliary transformer	03/30/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0029B	B' phase time delay overcurrent relay (51) for breaker L1009 which is the supply for bus L10 from bus L12	11/20/2006	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0029A	A' phase time delay overcurrent relay (51) for breaker L1009 which is the supply for bus L10 from bus L12	11/23/2006	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0029C	C' phase time delay overcurrent relay (51) for breaker L1009 which is the supply for bus L10 from bus L12	11/21/2006	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0030	Time ground overcurrent relay (51N) for breaker L1009 which is the supply for bus L10 from bus L12	11/21/2006	Preventive	As found testing and calibration check performed for relay.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1R22Q0034	Time ground overcurrent relay (51N) for breaker L1010 which is the supply for interbus transformer LH-1-A	02/14/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0101R	Undervoltage relay (27) for bus L11	03/27/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11S0001A	Main tranformer phase 'A'	04/29/2007	Other	Change contactors in the cooling system for main transformer phase 'A'.
PY-1S11S0001B	Main tranformer phase 'B'	04/29/2007	Other	Change contactors in the cooling system for main transformer phase 'B'.
PY-1S11S0001C	Main tranformer phase 'C'	04/29/2007	Other	Change contactors in the cooling system for main transformer phase 'C'.
PY-1S11S0003	Unit 1 Auxilary transformer	06/28/2009	Other	Change contactors in the cooling system for Unit 1 auxiliary transformer.
PY-1R22Q0101S	Undervoltage relay (27) for bus L11	03/28/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0810A	A' phase time delay overcurrent relay (51) for breaker EH1303 which is the supply for Division 3 safety related bus EH13 from interbus transformer LH-1-A	02/26/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0810C	C' phase time delay overcurrent relay (51) for breaker EH1303 which is the supply for Division 3 safety related bus EH13 from interbus transformer LH-1-A	02/26/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0810B	B' phase time delay overcurrent relay (51) for breaker EH1303 which is the supply for Division 3 safety related bus EH13 from interbus transformer LH-1-A	02/27/2007	Preventive	As found testing and calibration check performed for relay.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1S11S0001B	Main tranformer phase 'B'	05/12/2007	Elective	Infrared thermography readings showed an elevated temperature. Wire connections reworked to eliminate any high resistance connections due to making poor electrical contact.
PY-1R22Q0103B	B' phase time delay overcurrent relay (51) for breaker L1102 which is the supply for bus L11 from Unit 1 auxiliary transformer	03/27/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0103A	A' phase time delay overcurrent relay (51) for breaker L1102 which is the supply for bus L11 from Unit 1 auxiliary transformer	05/23/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0103C	C' phase time delay overcurrent relay (51) for breaker L1102 which is the supply for bus L11 from Unit 1 auxiliary transformer	05/23/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R11K0001	Static transformer differential relay (87T) for interbus transformer LH-1-A	03/11/2008	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0728A	A' phase time delay overcurrent relay (51) for breaker EH1212 which is the supply for Division 2 safety related bus EH12 from interbus transformer LH-1-A	07/26/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0728C	C' phase time delay overcurrent relay (51) for breaker EH1212 which is the supply for Division 2 safety related bus EH12 from interbus transformer LH-1-A	07/27/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0728B	B' phase time delay overcurrent relay (51) for breaker EH1212 which is the supply for Division 2 safety related bus EH12 from interbus transformer LH-1-A	07/26/2007	Preventive	As found testing and calibration check performed for relay.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1R22Q0729	Time ground overcurrent relay (51N) for breaker EH1212 which is the supply for Division 2 safety related bus EH12 from interbus transformer LH-1-A	01/31/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0102R	Undervoltage or overvoltage relay (27/59) for bus L11	10/18/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0102S	Undervoltage or overvoltage relay (27/59) for bus L11	10/18/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R11S0003	Interbus transformer LH-1-A	03/12/2008	Preventive	Cooler maintenance on transformer. Clean and inspect various aspects of transformer. Nitrogen system component calibration check.
PY-1S11S0001A	Main tranformer phase 'A'	02/21/2007	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001B	Main tranformer phase 'B'	02/21/2007	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001C	Main tranformer phase 'C'	02/21/2007	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1R11Q0001A	A' phase thermal relay (49) for interbus transformer LH-1-A	03/09/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R11Q0001B	B' phase thermal relay (49) for interbus transformer LH-1-A	03/09/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R11Q0001C	C' phase thermal relay (49) for interbus transformer LH-1-A	03/14/2007	Preventive	As found testing and calibration check performed for relay.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1R11Q0002	Oil temperature relay (26) for interbus transformer LH-1-A	11/20/2007	Preventive	As found testing and calibration check performed for relay.
PY-1R11Q0004	Sudden pressure relay (63) for interbus transformer LH-1-A	10/26/2010	Preventive	As found testing and calibration check performed for relay.
PY-1R11Q7002A	Undervoltage relay (27) for interbus transformer LH-1-A	03/12/2008	Preventive	As found testing and calibration check performed for relay.
PY-1R11Q7003A	Undervoltage relay (27) for interbus transformer LH-1-A	03/12/2008	Preventive	As found testing and calibration check performed for relay.
PY-1R11Q7001A	Undervoltage relay (27) for interbus transformer LH-1-A	03/12/2008	Preventive	As found testing and calibration check performed for relay.
PY-1S11S0003	Unit 1 Auxilary transformer	04/17/2007	Preventive	General maintenance on transformer. Clean and inspect various aspects of transformer.
PY-1S11Q0015A	Sudden pressure relay (63) for main transformer 'A' phase	04/03/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0015B	Sudden pressure relay (63) for main transformer 'B' phase	04/03/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0015C	Sudden pressure relay (63) for main transformer 'C' phase	04/03/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0023	Sudden pressure relay (63) for Unit 1 auxiliary transformer	04/03/2007	Preventive	As found testing and calibration check performed for relay.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1S11K0001	A' phase transformer differential relay (87T) for Unit 1 auxiliary transformer	04/05/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0001	A' phase transformer differential relay (87T) for Unit 1 auxiliary transformer	4/5/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0002	B' phase transformer differential relay (87T) for Unit 1 auxiliary transformer	04/06/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0002	B' phase transformer differential relay (87T) for Unit 1 auxiliary transformer	4/6/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0003	C' phase transformer differential relay (87T) for Unit 1 auxiliary transformer	04/02/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0003	C' phase transformer differential relay (87T) for Unit 1 auxiliary transformer	4/2/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0004	Transformer neutral time overcurrent relay (51NT) for Unit 1 auxiliary transformer	04/02/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0004	Transformer neutral time overcurrent relay (51NT) for Unit 1 auxiliary transformer	4/2/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0005	Transformer neutral time overcurrent relay (51NT) for Unit 1 auxiliary transformer	04/02/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0005	Transformer neutral time overcurrent relay (51NT) for Unit 1 auxiliary transformer	4/2/2007	Preventive	As found testing and calibration check performed for relay.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1S11K0035	Transformer differential relay (87T) for main transformer 'A' phase	03/02/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0035	Transformer differential relay (87T) for main transformer 'A' phase	3/2/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0036	Transformer differential relay (87T) for main transformer 'B' phase	04/06/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0036	Transformer differential relay (87T) for main transformer 'B' phase	4/6/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0037	Transformer differential relay (87T) for main transformer 'C' phase	04/05/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0037	Transformer differential relay (87T) for main transformer 'C' phase	4/5/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0038	Instantaneous overcurrent and transformer neutral time overcurrent relay (50/51NT) for main transformer	04/02/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0038	Instantaneous overcurrent and transformer neutral time overcurrent relay (50/51NT) for main transformer	4/2/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11S0001B	Main tranformer phase 'B'	05/01/2007	Elective	No cooling alarm received. Toggle switch 43C was replaced during a forced or refueling outage.
PY-1S11Q0011A	Thermal relay (49) for main transformer 'A' phase	07/25/2011	Preventive	As found testing and calibration check performed for relay.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1S11Q0011B	Thermal relay (49) for main transformer 'B' phase	07/26/2011	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0012A	Thermal relay (49) for main transformer 'A' phase	07/26/2011	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0015A	A' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1006 which is the supply for bus L10 from bus L11	06/16/2008	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0015B	B' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1006 which is the supply for bus L10 from bus L11	06/16/2008	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0015C	C' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1006 which is the supply for bus L10 from bus L11	06/17/2008	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0016	Time ground overcurrent relay (51N) for breaker L1006 which is the supply for bus L10 from bus L11	06/17/2008	Preventive	As found testing and calibration check performed for relay.
PY-1R11S0003	Interbus transformer LH-1-A	06/05/2008	Preventive	Drain interbus transformer LH-1-A nitrogen regulator oil sump. Vendor recommended routine maintenance.
PY-1S11S0001A	Main tranformer phase 'A'	06/23/2007	Preventive	Cooler maintenance on transformer. Clean and inspect various aspects of transformer. Nitrogen system component calibration check.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1S11S0001B	Main tranformer phase 'B'	06/23/2007	Preventive	Cooler maintenance on transformer. Clean and inspect various aspects of transformer. Nitrogen system component calibration check.
PY-1S11S0003	Unit 1 Auxilary transformer	06/11/2007	Preventive	Drain Unit 1 auxiliary transformer nitrogen regulator oil sump. Vendor recommended routine maintenance.
PY-1S11Q0012B	Thermal relay (49) for main transformer 'B' phase	07/27/2011	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0011C	Thermal relay (49) for main transformer 'C' phase	08/12/2011	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0012C	Thermal relay (49) for main transformer 'C' phase	08/10/2011	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0014B	Oil temperature relay (26) for main transformer 'B' phase	08/09/2011	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0014C	Oil temperature relay (26) for main transformer 'C' phase	08/11/2011	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0014A	Oil temperature relay (26) for main transformer 'A' phase	08/09/2011	Preventive	As found testing and calibration check performed for relay.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1R22Q0638	Time ground overcurrent relay (51N) for breaker EH1114 which is the supply for Division 1 safety related bus EH11 from interbus transformer LH-1-A	06/10/2008	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0637C	C' phase time delay overcurrent relay (51) for breaker EH1114 which is the supply for Division 1 safety related bus EH11 from interbus transformer LH-1-A	06/10/2008	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0637B	B' phase time delay overcurrent relay (51) for breaker EH1114 which is the supply for Division 1 safety related bus EH11 from interbus transformer LH-1-A	06/11/2008	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0637A	A' phase time delay overcurrent relay (51) for breaker EH1114 which is the supply for Division 1 safety related bus EH11 from interbus transformer LH-1-A	06/11/2008	Preventive	As found testing and calibration check performed for relay.
PY-1S11S0003	Unit 1 Auxilary transformer	10/03/2007	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11Q0021B	Thermal relay (49) for Unit 1 auxiliary transformer	06/09/2010	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0022	Oil temperature relay (26) for Unit 1 auxiliary transformer	06/09/2010	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0021C	Thermal relay (49) for Unit 1 auxiliary transformer	06/10/2010	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0021A	Thermal relay (49) for Unit 1 auxiliary transformer	06/10/2010	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0015A	Sudden pressure relay (63) for main transformer 'A' phase	04/18/2011	Preventive	As found testing and calibration check performed for relay.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1S11Q0015B	Sudden pressure relay (63) for main transformer 'B' phase	04/18/2011	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0015C	Sudden pressure relay (63) for main transformer 'C' phase	04/18/2011	Preventive	As found testing and calibration check performed for relay.
PY-1S11Q0023	Sudden pressure relay (63) for Unit 1 auxiliary transformer	04/19/2011	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0035	Transformer differential relay (87T) for main transformer 'A' phase	3/2/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0036	Transformer differential relay (87T) for main transformer 'B' phase	04/06/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0037	Transformer differential relay (87T) for main transformer 'C' phase	4/5/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0037	Transformer differential relay (87T) for main transformer 'C' phase	4/5/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0038	Instantaneous overcurrent and transformer neutral time overcurrent relay (50/51NT) for main transformer	04/02/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0038	Instantaneous overcurrent and transformer neutral time overcurrent relay (50/51NT) for main transformer	04/02/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0004	Transformer neutral time overcurrent relay (51NT) for Unit 1 auxiliary transformer	04/19/2011	Preventive	As found testing and calibration check performed for relay.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1S11K0004	Transformer neutral time overcurrent relay (51NT) for Unit 1 auxiliary transformer	4/2/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0005	Transformer neutral time overcurrent relay (51NT) for Unit 1 auxiliary transformer	04/02/2007	Preventive	As found testing and calibration check performed for relay.
PY-1S11K0005	Transformer neutral time overcurrent relay (51NT) for Unit 1 auxiliary transformer	4/19/2011	Preventive	As found testing and calibration check performed for relay.
PY-1S11S0003	Unit 1 Auxilary transformer	04/07/2009	Preventive	Cooler maintenance on transformer. Clean and inspect various aspects of transformer. Nitrogen system component calibration check.
PY-1R22S0007	Division 1 safety related bus EH11	04/27/2007	Elective	74 relay used in the control of breaker EH1103 was not picked up. The relay was replaced.
PY-1S11S0001C	Main tranformer phase 'C'	04/28/2007	Elective	D-1-B ground alarm came in while installing supervisory fuses. Ground was corrected
PY-1S11S0001C	Main tranformer phase 'C'	06/23/2007	Preventive	Cooler maintenance on transformer.
PY-1S11S0001C	Main tranformer phase 'C'	05/05/2007	Elective	Main transformer 'C' phase had a leak or failure of nitogen system. This issue was correced.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1S11S0001C	Main tranformer phase 'C'	05/23/2007	Corrective	A ground was received on the cooling system for the 'C' phase of the main generator. This issue was corrected.
PY-1S11S0001C	Main tranformer phase 'C'	07/19/2007	Other	Oil was discovered below the normal operating parameters. Oil was added and issue was corrected.
PY-1S11S0003	Unit 1 Auxilary transformer	06/10/2008	Preventive	Drain Unit 1 auxiliary transformer nitrogen regulator oil sump. Vendor recommended routine maintenance.
PY-1R22S0002	Bus L11	06/25/2007	Elective	Breaker L1102 had difficulties during a close command. The issue was troubleshot and corrected.
PY-1S11S0001A	Main tranformer phase 'A'	06/18/2008	Preventive	Cooler maintenance on transformer.
PY-1S11S0001A	Main tranformer phase 'A'	06/23/2009	Preventive	Cooler maintenance on transformer.
PY-1S11S0001B	Main tranformer phase 'B'	06/20/2008	Preventive	Cooler maintenance on transformer.
PY-1S11S0001B	Main tranformer phase 'B'	06/24/2009	Preventive	Cooler maintenance on transformer.
PY-1S11S0001C	Main tranformer phase 'C'	06/19/2008	Preventive	Cooler maintenance on transformer.
PY-1S11S0001C	Main tranformer phase 'C'	06/24/2009	Preventive	Cooler maintenance on transformer.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1S11S0001A	Main tranformer phase 'A'	09/27/2007	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001B	Main tranformer phase 'B'	09/27/2007	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001C	Main tranformer phase 'C'	09/27/2007	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1R22Q0008A	A' phase time overcurrent relay (51) for breaker L1003 which is the supply for L10 from Unit 1 Start Up transformer	10/08/2010	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0008B	B' phase time overcurrent relay (51) for breaker L1003 which is the supply for L10 from Unit 1 Start Up transformer	10/08/2010	Preventive	As found testing and calibration check performed for relay.
PY-1R11K0002	Transformer neutral time overcurrent relay (51NT) for Unit 1 auxiliary transformer	10/26/2010	Preventive	As found testing and calibration check performed for relay.
PY-1R11K0003	Transformer neutral time overcurrent relay (51NT) for Unit 1 auxiliary transformer	10/25/2010	Preventive	As found testing and calibration check performed for relay.
PY-1S11S0001B	Main tranformer phase 'B'	07/19/2007	Elective	Oil leaks on Main Transformer "B" Phase.
PY-1S11S0001A	Main tranformer phase 'A'	07/23/2007	Elective	Alarm would not acknowledge
PY-1S11S0001C	Main tranformer phase 'C'	10/10/2007	Elective	NE fans sound loud/CR
PY-1S11S0001B	Main tranformer phase 'B'	09/14/2007	Other	Main Xfmer B phase requires oil sample
PY-1R22Q0204	Transformer neutral time overcurrent relay (51NT) for Unit 1 auxiliary transformer	03/05/2009	Preventive	As found testing and calibration check performed for relay.

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1N41K0024	Static overall differential relay (87U) for main generator	3/9/2009	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0104	Transformer neutral time overcurrent relay (51NT) for Unit 1 auxiliary transformer	02/23/2009	Preventive	As found testing and calibration check performed for relay.
PY-1R22S0003	Bus L12	03/30/2009	Preventive	Bus and breaker cubicle detailed clean and inspection.
PY-1S11S0003	Unit 1 Auxilary transformer	03/30/2009	Preventive	As found testing and calibration check performed for relay.
PY-1S11S0003	Unit 1 Auxilary transformer	03/13/2009	Preventive	Perform Doble testing
PY-1S11S0001C	Main tranformer phase 'C'	10/10/2007	Corrective	/480 V Backup Ground F1A/F1B
PY-1S11S0001A	Main tranformer phase 'A'	01/22/2009	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001A	Main tranformer phase 'A'	11/11/2009	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001B	Main tranformer phase 'B'	11/22/2008	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001B	Main tranformer phase 'B'	11/11/2009	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001C	Main tranformer phase 'C'	11/22/2008	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001C	Main tranformer phase 'C'	11/11/2009	Predictive	Perform Electromagnetic Interference (EMI) testing.

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DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1R22S0003	Bus L12	10/18/2007	Elective	L1209 Brkr Red light (closed) not illum.
PY-1R22S0002-002	Breaker L1102 which is the normal supply breaker fed from Unit 1 auxiliary transformer	01/19/2010	Preventive	Breaker detailed inspection and functional testing.
PY-1R22S0009-003	Breaker EH1303 which is the normal supply breaker for Division 3 safety related bus fed from interbus transformer LH-1-A	01/17/2011	Preventive	Breaker detailed inspection and functional testing.
PY-1R22S0003-002	Breaker L1202 which is the normal supply breaker fed from Unit 1 auxiliary transformer	03/04/2010	Preventive	Breaker detailed inspection and functional testing.
PY-1R22Q0103D	A' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1102 which is the supply from Unit 1 auxiliary transformer	03/10/2011	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0103E	B' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1102 which is the supply from Unit 1 auxiliary transformer	03/10/2011	Preventive	As found testing and calibration check performed for relay.
PY-1R22S0009-003	Breaker EH1303 which is the normal supply breaker for Division 3 safety related bus fed from interbus transformer LH-1-A	04/06/2008	Preventive Replacement	Replace potential transformer (PT) fuses
PY-1R22S0009	Division 3 safety related bus EH13	04/06/2008	Preventive Replacement	Replace potential transformer (PT) fuses
PY-1R11S0003	Interbus transformer LH-1-A	01/15/2009	Preventive Replacement	Replace potential transformer (PT) fuses
PY-1R22S0001-006	Breaker L1006 which is normally open but connects the L10 and L11 busses	03/26/2010	Preventive	Breaker detailed inspection and functional testing.
PY-1R22S0001-009	Breaker L1009 which is normally open but connects the L10 and L12 busses	02/26/2010	Preventive	Breaker detailed inspection and functional testing.

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DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1R22Q0103F	C' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1102 which is the supply from Unit 1 auxiliary transformer	06/10/2010	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0034	Time ground overcurrent relay for breaker L1010 which is supply for interbus transformer LH-1-A	10/26/2010	Preventive	As found testing and calibration check performed for relay.
PY-1S11S0003	Unit 1 Auxilary transformer	10/17/2008	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0003	Unit 1 Auxilary transformer	12/07/2009	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0003	Unit 1 Auxilary transformer	03/23/2009	Preventive	Drain Unit 1 auxiliary transformer nitrogen regulator oil sump. Vendor recommended routine maintenance.
PY-1R22S0003	Bus L12	05/15/2009	Preventive Replacement	Replace potential transformer (PT) fuses
PY-1R22S0007	Division 1 safety related bus EH11	03/13/2009	Preventive Replacement	Replace potential transformer (PT) fuses
PY-1R22S0006	Division 2 safety related bus EH12	04/30/2011	Preventive Replacement	Replace potential transformer (PT) fuses
PY-1S11S0001B	Main tranformer phase 'B'	06/20/2008	Elective	Main xfmr B cooling fan broken
PY-1S11S0001B	Main tranformer phase 'B'	06/30/2008	Other	Request for oil sample
PY-1R22S0009-003	Breaker EH1303 which is the normal supply breaker for Division 3 safety related bus fed from interbus transformer LH-1-A	11/16/2010	Preventive Replacement	Replace control relays within breaker EH1303 cubicle

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1R22S0009	Division 3 safety related bus EH13	04/19/2011	Preventive Replacement	Replace control relays. Template task requirement.
PY-1R22S0007	Division 1 safety related bus EH11	03/16/2009	Preventive Replacement	Replace control relays. Template task requirement.
PY-1R22S0006	Division 2 safety related bus EH12	05/01/2011	Preventive Replacement	Replace control relays. Template task requirement.
PY-1R11S0003	Interbus transformer LH-1-A	10/25/2010	Preventive	Drain interbus transformer LH-1-A nitrogen regulator oil sump. Vendor recommended routine maintenance.
PY-1S11S0003	Unit 1 Auxilary transformer	07/29/2008	Elective	Auxiliary Transformer cooling fan vibrating
PY-1R22Q0029B	B' phase time delay overcurrent relay (51) for breaker L1009 which is the supply for bus L10 from bus L12	02/21/2011	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0029C	C' phase time delay overcurrent relay (51) for breaker L1009 which is the supply for bus L10 from bus L12	02/21/2011	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0030	Time ground overcurrent relay (51N) for breaker L1009 which is the supply for bus L10 from bus L12	02/22/2011	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0033B	B' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1010 which is the supply for interbus transformer LH-1-A	08/31/2011	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0033C	C' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1010 which is the supply for interbus transformer LH-1-A	09/01/2011	Preventive	As found testing and calibration check performed for relay.

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DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1R22Q0029A	A' phase time delay overcurrent relay (51) for breaker L1009 which is the supply for bus L10 from bus L12	02/23/2011	Preventive	As found testing and calibration check performed for relay.
PY-1R11S0003	Interbus transformer LH-1-A	10/27/2010	Other	Leak/Corroded terminal screws LH-1-A CRC
PY-1R22S0001	Bus L10	10/17/2008	Elective	L10 Undervoltageage alarm locked in
PY-1S11S0001C	Main tranformer phase 'C'	12/16/2008	Elective	Operator reported a different noise
PY-1R22Q0203A	A' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1202 which is the supply from Unit 1 auxiliary transformer	07/26/2010	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0203B	B' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1202 which is the supply from Unit 1 auxiliary transformer	07/27/2010	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0203C	C' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1202 which is the supply from Unit 1 auxiliary transformer	07/27/2010	Preventive	As found testing and calibration check performed for relay.
PY-1R22Q0033A	A' phase instantaneous and time delay overcurrent relay (50/51) for breaker L1010 which is the supply for interbus transformer LH-1-A	09/02/2011	Preventive	As found testing and calibration check performed for relay.
PY-1R22S0002	Bus L11	05/14/2009	Elective	Corona damage on PT/CR 09-55027
PY-1R22S0003	Bus L12	05/14/2009	Elective	Corona damage on PT/CR 09-55027
PY-1R22S0002	Bus L11	06/02/2011	Preventive Replacement	Replace potential transformer (PT) fuses

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DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1R22S0002	Bus L11	04/26/2011	Preventive	Bus and breaker cubicle detailed clean and inspection.
PY-1R22S0003	Bus L12	05/27/2009	Elective	Buss L12 PT's BA found damaged
PY-1R22S0002	Bus L11	05/01/2009	Corrective	50G relay on LF-1-C Tripped
PY-1R22S0002	Bus L11	05/27/2011	Other - Corrective Actions	$ REPLACE ORIGINAL FP-32 FUSE BLOCKS / C
PY-1R22S0003	Bus L12	06/01/2011	Other - Corrective Actions	$ REPLACE ORIGINAL FP-32 FUSE BLOCKS / C
PY-1S11S0003	Unit 1 Auxilary transformer	05/09/2011	Preventive	General maintenance on transformer. Clean and inspect various aspects of transformer.
PY-1S11S0003	Unit 1 Auxilary transformer	06/07/2010	Preventive	Drain Unit 1 auxiliary transformer nitrogen regulator oil sump. Vendor recommended routine maintenance.
PY-1S11S0003	Unit 1 Auxilary transformer	06/06/2011	Preventive	Drain Unit 1 auxiliary transformer nitrogen regulator oil sump. Vendor recommended routine maintenance.
PY-1R22Q0103A	A' phase time delay overcurrent relay (51) for breaker L1102 which is the supply for bus L11 from Unit 1 auxiliary transformer	05/01/2009	Elective	REPLACE RELAY 1R22Q0103A AND 86B RELAY F

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DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1S11S0001B	Main tranformer phase 'B'	05/08/2009	Elective	LOCAL ANNUNCIATOR "B" PH FAILED SPR TEST
PY-1S11S0001C	Main tranformer phase 'C'	07/09/2009	Elective	Local annun window does not work
PY-1S11S0003	Unit 1 Auxilary transformer	01/26/2011	Other Balance, ContinGenerator cies	Transformer High Gas Pressure Alarm
PY-1S11S0001A	Main tranformer phase 'A'	05/29/2009	Elective	Obtain Oil Sample From Main Transformer
PY-1S11S0001A	Main tranformer phase 'A'	07/29/2010	Preventive	Cooler maintenance on transformer.
PY-1S11S0001B	Main tranformer phase 'B'	07/30/2010	Preventive	Cooler maintenance on transformer.
PY-1S11S0001C	Main tranformer phase 'C'	07/31/2010	Preventive	Cooler maintenance on transformer.
PY-1R22S0002	Bus L11	04/23/2011	Preventive Replacement	Replace potential transformers (PT)
PY-1R22S0006	Division 2 safety related bus EH12	08/12/2009	Other	Screw found on shelf in EH1208/CR
PY-1R22S0006	Division 2 safety related bus EH12	05/03/2011	Preventive	Bus and breaker cubicle detailed clean and inspection.
PY-1S11S0001A	Main tranformer phase 'A'	06/04/2011	Other - Design	$ REPLACE LAMINATED LINKS WITH NEW LAMIN
PY-1S11S0001B	Main tranformer phase 'B'	06/04/2011	Other - Design	$ REPLACE LAMINATED LINKS WITH NEW LAMIN
PY-1S11S0001C	Main tranformer phase 'C'	06/04/2011	Other - Design	$ REPLACE LAMINATED LINKS WITH NEW LAMIN

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DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 1 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-1S11S0001A	Main tranformer phase 'A'	07/29/2010	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001A	Main tranformer phase 'A'	09/20/2011	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001B	Main tranformer phase 'B'	07/29/2010	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001B	Main tranformer phase 'B'	09/20/2011	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001C	Main tranformer phase 'C'	07/29/2010	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001C	Main tranformer phase 'C'	09/20/2011	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0003	Unit 1 Auxilary transformer	12/06/2010	Predictive	Perform Electromagnetic Interference (EMI) testing.
PY-1S11S0001C	Main tranformer phase 'C'	04/22/2010	Elective	~Mn XFMR "C"cooling fan noisy/CR 10-7369
PY-1S11S0001C	Main tranformer phase 'C'	08/05/2010	Other	C' SE COOLER, 1ST FAN FROM TOP IS NOISY
PY-1R22S0003-002	Breaker L1202 which is the normal supply breaker fed from Unit 1 auxiliary transformer	06/06/2011	Deficient - Low Consequence	Shutter is Open ~ 80% on L1202
PY-1R22S0006	Division 2 safety related bus EH12	06/06/2011	Other - Corrective Actions	T/S PROBLEMS IDENTIFIED DURING MAINT
PY-1R22S0006	Division 2 safety related bus EH12	05/06/2011	Deficient - Critical	Light socket PF missing resistor

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 2 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	11/21/2006	Predictive	DGO, DIELECT OIL SAMPLE - U2 STARTUP XMF
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	05/22/2007	Predictive	00002 DGO, DIELECT OIL SAMPLE - U2 START
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	10/24/2007	Predictive	00002 DGO, DIELECT OIL SAMPLE - U2 START
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	10/18/2007	Predictive	(R/T) EMI TESTING - U2 STARTUP XFMR
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	04/09/2008	Predictive	DGO, DIELECT OIL SAMPLE - U2 STARTUP XMF
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	09/24/2008	Preventitive	200-PY-B START UP XFMR GENERAL MAINT
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	09/22/2008	Predictive	DGO, DIELECT OIL SAMPLE - U2 STARTUP XMF
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	11/01/2008	Other	OIL SAMPLE/CR
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	01/02/2009	Predictive	(R/T) EMI TESTING - U2 STARTUP XFMR
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	12/15/2008	Other	ADD'L OIL SAMPLE TO CONFIRM DOBLE REPORT
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	04/21/2009	Predictive	DGO, DIELECT OIL SAMPLE - U2 STARTUP XMF

ATTACHMENT 3

DELAYED ACCESS CIRCUIT (BACKFEED CONFIGURATION)
COMPONENTS MAINTENANCE HISTORY

Unit 2 Component, Five Year Maintenance History

Functional Location	Functional Location Description	Completion Date	Maintenance Activity Type	Order Description
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	12/03/2009	Predictive	DGO, DIELECT OIL SAMPLE - U2 STARTUP XMF
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	03/09/2010	Predictive	(R/T) EMI TESTING - U2 STARTUP XFMR
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	05/27/2010	Predictive	DGO, DIELECT OIL SAMPLE - U2 STARTUP XMF
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	08/26/2010	Predictive	DGO, DIELECT OIL SAMPLE - U2 STARTUP XMF
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	02/15/2011	Predictive	DGO, DIELECT OIL SAMPLE - U2 STARTUP XMF
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	02/21/2011	Predictive	(R/T) EMI TESTING - U2 STARTUP XFMR
PY-2S11S0002	UNIT 2 STARTUP TRANSFORMER COOLING GRO	08/23/2011	Predictive	DGO, DIELECT OIL SAMPLE - U2 STARTUP XMF