

From: "Albon Harrison" <awharrison@stpegs.com>
To: <JLM3@nrc.gov>
Date: 5/16/03 3:05PM
Subject: STP Comparison to Vogtle for Sequencer TS

John,

We reviewed the Georgia Power application dated December 29, 1994 to add the sequencer to the Vogtle TS. I believe the assessment is consistent with the positions we established in our application for the TS change.

The key statements from the Vogtle application are provided below with the STP position.

Excerpt from Vogtle application (emphasis added):

When an automatic load sequencer is inoperable, the safety related loads for the bus served by that sequencer may not load as assumed in the safety analyses, even if the preferred offsite power source or the emergency diesel generator are available. The determination of whether the bus will, or will not be loaded under this scenario depends upon what portion or function of the automatic load sequencer is inoperable and the plant mode of operation. During Modes 1-4, the automatic load sequencer serves dual, but separate, purposes in ESFAS and emergency safety bus loading for an LOSP or degraded grid condition. The function of the automatic load sequencer for detecting loss of power and degraded bus voltage can be inoperable but the sequencer may still initiate the sequencing of loads in response to an ESFAS signal from the solid state protection system (SSPS). Therefore the appropriate action and LCO of 12 hours for an inoperable automatic load sequencer was conservatively chosen to be the same as when an offsite power source and emergency diesel generator are inoperable.

Later in the application, it reads:

...Therefore the inoperability of an automatic load sequencer is no more severe than the concurrent inoperability of both power sources for that train. The appropriate action for concurrent inoperability of both power sources is already specified in 3.8.1.1.

STP Position:

Unlike the Vogtle application, STP does not consider the sequencer to be a support system for offsite power; however STP considers the sequencer to be a support system for the equipment it must load for a SI event without loss of offsite power (Sequencer Mode I). Like the Vogtle application, STP considers the sequencer a support system for its associated SDG (Sequencer Mode II and Mode III) and considers the loss of power/degraded power instrumentation a support system for the sequencer's function to start the SDG. The 7 day allowed outage time for the sequencer is based on the most restrictive allowed outage time of the components it supports.

Basis:

The STP load sequencer functions appear to be essentially the same as those described for the Vogtle sequencer. The fundamental difference is in the application of the Technical Specifications. The Vogtle application describes the sequencer as a support system for the offsite power source. Application of the definition of operability to the STP LCOs and SRs associated with offsite power lead to the conclusion that offsite power is operable provided the buses are energized and correctly aligned. No function of the sequencer is required to satisfy these LCOs or SRs. Therefore, STP does not consider it appropriate to relate operability of offsite power to operability of the sequencer.

The sequencer is required in an SI (Mode I) in order for SI signal actuated equipment to be loaded. In an

SI event, this is the sequencer's only function. Therefore, the sequencer is a support system for this equipment. The shortest LCO for any of these components separately or together is 7 days.

The sequencer is also required to start the SDG in the event of a LOOP (Mode II). In this case the sequencer is a support system for the SDG. The SDG's LCO is 14 days.

The sequencer is also required to start the SDG and load the SI equipment in the event of a LOOP and SI (Mode III). In this case it is a support system for the SDG and the SI equipment. The shortest LCO for any of the components together or individually is 7 days.

The undervoltage/degraded voltage instrumentation is a support function for the sequencer's function to start the SDG. Inoperability of the undervoltage/degraded voltage instrumentation will not affect the capability of the sequencer to sequence loads on the bus for events that do not involve a loss of offsite power (i.e., Sequencer Mode I). Therefore, the ultimate result of the inoperable undervoltage/degraded voltage instrumentation is that the associated SDG is inoperable, which is consistent with standard Westinghouse TS. STP is proposing to change the required action for inoperable undervoltage/degraded voltage instrumentation to match the standard TS.

Wayne Harrison
STPNOC Licensing
361-972-7298
pager 0594
awharrison@stpegs.com

CC: <NJSTRING@southernco.com>, "Daniel Stillwell" <dwstillwell@stpegs.com>, "Evan Heacock" <elheacock@stpegs.com>, "John Milliff" <jmilliff@stpegs.com>, "Roland Dunn" <rfdunn@stpegs.com>, "Scott Head" <smhead@stpegs.com>, "Ted Riccio" <tjriccio@stpegs.com>

Received: from igate2.nrc.gov
by nrcgwia.nrc.gov; Fri, 16 May 2003 15:05:00 -0400
Received: from mta01.icsnetsys.com (mta01.icsnetsys.com [69.27.238.36])
by smtp-gateway ESMTPo id h4GJ3IPM025436
for <JLM3@nrc.gov>; Fri, 16 May 2003 15:03:19 -0400 (EDT)
Received: from stpegs.com (stpegs.com [12.34.243.170])
by mta01.icsnetsys.com (Switch-2.2.0/Switch-2.2.0) with SMTP id h4GlvJS26227
for <JLM3@nrc.gov>; Fri, 16 May 2003 14:57:19 -0400 (EDT)
Received: from GWDOM_STP-Message_Server by stpegs.com
with Novell_GroupWise; Fri, 16 May 2003 14:01:33 -0500
Message-Id: <sec4ef3d.069@stpegs.com>
X-Mailer: Novell GroupWise 5.5.5
Date: Fri, 16 May 2003 14:01:32 -0500
From: "Albon Harrison" <awharrison@stpegs.com>
To: <JLM3@nrc.gov>
Cc: <NJSTRING@southernco.com>, "Daniel Stillwell" <dwstillwell@stpegs.com>,
"Evan Heacock" <elheacock@stpegs.com>, "John Milliff" <jmilliff@stpegs.com>,
"Roland Dunn" <rfdunn@stpegs.com>, "Scott Head" <smhead@stpegs.com>,
"Ted Riccio" <tjriccio@stpegs.com>
Subject: STP Comparison to Vogtle for Sequencer TS
Mime-Version: 1.0
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: quoted-printable
Content-Disposition: inline

John,

We reviewed the Georgia Power application dated December 29, 1994 to add the sequencer to the Vogtle TS. I believe the assessment is consistent with the positions we established in our application for the TS change.

The key statements from the Vogtle application are provided below with the STP position.

Excerpt from Vogtle application (emphasis added):

When an automatic load sequencer is inoperable, the safety related loads for the bus served by that sequencer may not load as assumed in the safety analyses, even if the preferred offsite power source or the emergency diesel generator are available. The determination of whether the bus will, or will not be loaded under this scenario depends upon what portion or function of the automatic load sequencer is inoperable and the plant mode of operation. During Modes 1-4, the automatic load sequencer serves dual, but separate, purposes in ESFAS and emergency safety bus loading for an LOSP or degraded grid condition. The function of the automatic load sequencer for detecting loss of power and degraded bus voltage can be inoperable but the sequencer may still initiate the sequencing of loads in response to an ESFAS signal from the solid state protection system (SSPS).

Therefore the appropriate action and LCO of 12 hours for an inoperable automatic load sequencer was conservatively chosen to be the same as when an offsite power source and emergency diesel generator are inoperable.

Later in the application, it reads:

...Therefore the inoperability of an automatic load sequencer is no more severe than the concurrent inoperability of both power sources for that train. The appropriate action for concurrent inoperability of both power sources is already specified in 3.8.1.1.

STP Position:

Unlike the Vogtle application, STP does not consider the sequencer to be a support system for offsite power; however STP considers the sequencer to be a support system for the equipment it must load for a SI event without loss of offsite power (Sequencer Mode I). Like the Vogtle application, STP considers the sequencer a support system for its associated SDG (Sequencer Mode II and Mode III) and considers the loss of power/degraded power instrumentation a support system for the sequencer's function to start the SDG. The 7 day allowed outage time for the sequencer is based on the most restrictive allowed outage time of the components it supports.

Basis:

The STP load sequencer functions appear to be essentially the same as those described for the Vogtle sequencer. The fundamental difference is in the application of the Technical Specifications. The Vogtle application describes the sequencer as a support system for the offsite power source.

Application of the definition of operability to the STP LCOs and SRs associated with offsite power lead to the conclusion that offsite power is operable provided the buses are energized and correctly aligned. No function of the sequencer is required to satisfy these LCOs or SRs. Therefore, STP does not consider it appropriate to relate operability of offsite power to operability of the sequencer.

The sequencer is required in an SI (Mode I) in order for SI signal actuated equipment to be loaded. In an SI event, this is the sequencer's only function. Therefore, the sequencer is a support system for this equipment. The shortest LCO for any of these components separately or together is 7 days.

The sequencer is also required to start the SDG in the event of a LOOP (Mode II). In this case the sequencer is a support system for the SDG. The SDG's LCO is 14 days.

The sequencer is also required to start the SDG and load the SI equipment in the event of a LOOP and SI (Mode III). In this case it is a support system for the SDG and the SI equipment. The shortest LCO for any of the components together or individually is 7 days.

The undervoltage/degraded voltage instrumentation is a support function for the sequencer's function to start the SDG. Inoperability of the undervoltage/degraded voltage instrumentation will not affect the capability of the sequencer to sequence loads on the bus for events that do not involve a loss of offsite power (i.e., Sequencer Mode I). Therefore, the ultimate result of the inoperable undervoltage/degraded voltage instrumentation is that the associated SDG is inoperable, which is consistent with standard Westinghouse TS. STP is proposing to change the

required action for inoperable undervoltage/degraded voltage instrumentation to match the standard TS.

Wayne Harrison
STPNOC Licensing
361-972-7298
pager 0594
awharrison@stpegs.com