June 6, 2008

LTR: Byron 2008-0055   NUREG 1021 Rev. 9
File: 1.10.0101   Section ES-501

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U. S. Nuclear Regulatory Commission
2443 Warrenville Road
Lisle, IL 60532-4352

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454 and STN 50-455

Subject: Submittal of 2008 Byron Initial License Examination Post-Examination
                Comments

Enclosed are the post examination comments for the 2008 Byron Initial License
Examination administered May 30, 2008.

This submittal includes comments on 13 questions. It is our recommendation that
question # 76 be corrected to reflect a different correct answer than the original; question
54 be corrected to reflect 2 correct answers, questions # 13, 24, 43 and 95 be
removed from the exam; and enhancements made to questions # 1, 2, 28, 34, 35, 66
and 89.

Should you have any questions concerning this matter, please contact Mr. William
Grundmann, Regulatory Assurance Manager at (815) 406-2800.

Respectfully,

David M. Hoots
Site Vice President
Byron Station

DMH/RFP/TLH/vym

Attachments: Byron 2008 ILT NRC post-exam review
              Operator rounds sheet (scan)
              Simulator parameters graph

cc: NRC Senior Resident Inspector – Byron Station w/o attachments

QUESTION: 001 (1.00)

The following Unit 1 plant conditions exist:

- Unit 1 has experienced a reactor trip and SI.
- Containment pressure is 27 psig.
- RCS pressure is 300 psig.
- Seven of Eight SX Cooling Tower Fans are running in High Speed.
- 0A fan will NOT start in High Speed.

Which ONE of the following actions is required per 1BEP-0, Reactor Trip or Safety Injection, when aligning the SX Cooling Towers?

a. OPEN all EIGHT riser valves.

b. Restart 0A fan in Low Speed.

c. CLOSE all FOUR Hot Water Basin Bypass valves.

d. Ensure that ONLY the bypass valve associated with the non-running fan is CLOSED.

ANSWER c.
REFERENCE:
1BEP-0, Reactor Trip or Safety Injection
I1-EP-XL-01, 1BEP-0, Reactor Trip or Safety Injection

Applicants' comment:
The stem of this question was confusing, and required clarifying. Choice "a" is performed at 1BEP-0 step 14.g.1), but later the riser valve for 0A fan is closed when it won't start. Recommend change to wording of question stem as follows for future use:
Which of the following actions is required to be completed in 1BEP-0, Reactor Trip or Safety Injection, when aligning the SX Cooling Towers?
No change to answers or grading is requested.

Facility comment:
The licensee agrees with applicants' recommended change.

QUESTION: 002 (1.00)

Unit 1 was at 100% power with all systems normally aligned when annunciator 1-12-B2, PZR PORV OR SAF VLV OPEN, alarms. The following indications are current:

- Actual PZR pressure is 2100 psig and lowering
- Channel 1PT-455 indicates 2500 psig
- PZR level is 62% and rising
- PRT temperature, pressure and level are rising
- All PZR Safety Valve indicator lights are GREEN

Action(s) to mitigate this transient is/are to . . .

a. close the PZR PORV block valve(s) for affected PORV(s).

b. manually trip the reactor and actuate SI.

c. verify insertion of control rods at 48 steps per minute.

d. manually trip the reactor, but DO NOT manually actuate SI.

ANSWER: a.
REFERENCE:
Horse Notes RY-2, PZR Pressure Control, Rev. 2;
RY-1, Pressurizer, Rev. 3;
Lesson Plan, Pressurizer (RY), Rev. 6, Attachment B;
BAR 1-12-B2, PZR PORV OR SAF VLV OPEN, Rev. 4;
1BOA INST-2, Rev. 103

Applicants' comment:
Stem of question provided enough information to determine the correct answer for the situation. However, additional actions would be required for a complete answer since the spray valves are open. Recommend adding "Pressurizer spray valves have been manually closed" to the stem for future use.
No change to answers or grading is requested.

Facility comment:
The licensee agrees with applicants' recommended change.

QUESTION: 013 (1.00)

Previously, 125 VDC Bus 211 was crosstied to Bus 111 due to equipment problems with Bus 111 Battery and Charger. Bus 111 Battery and Charger are Out of Service.

Presently,

- U-1 is in MODE 3.
- U-2 is in MODE 1.

Bus 111 conditions are:

- Crosstie loading due to the loading on Bus 111 is 183 Amps.
- Voltage on Bus 111 is 121 VDC.
- Then, a ground of 50 volts is detected on Bus 111.

Based upon the above conditions, which one of the following actions would be CORRECT?

a. Parameters on Bus 111 are normal and within limits. No action is necessary.

b. Enter into BOP, DC-15, DC Ground Isolation, due to an unexpected ground detected on Bus 111.

c. Shed non-essential loads from Bus 111 to lower Amperage to below 180 Amps to meet cross-tie loading restrictions.

d. Disconnect Bus 111 from Bus 211 in accordance with BOP DC-7, 125 VDC ESF Bus Crosstie/Restoration to ensure that the ground does not adversely affect loads on the operating unit.

ANSWER: a.
REFERENCE:
BOP DC-7, 125 VDC ESF Crosstie/Restoration

Applicants' comment:
Battery 211 terminal voltage is required to be at least 127.6 VDC per 1BOSR 8.6.1-2, Unit Two 125VDC ESF Battery Bank And Charger 211 Operability Weekly Surveillance, and 2BOL 8.6 (TS 3.8.6 LCOAR), Note 5.
Operator rounds for DC bus 111 list a minimum value of 127.6 volts, and maximum value of 140 volts.
Main Control Board alarm responses 1/2-21-E-10 for both Unit 1 and Unit 2 125V DC busses have alarm setpoints of $\leq$ 123V DC.
The stem of the question states that "Voltage on Bus 111 is 121 VDC".
This led the applicants to reject choice "a", "Parameters on Bus 111 are normal and within limits. No action is necessary." Bus 111 voltage is NOT normal and within limits; bus voltage is at least 6.6 VDC too low per the operator rounds and BOSR.
This question has no correct answer and should be deleted from the exam.

References:
1BOSR 8.6.1-1/2, Unit One/Two 125VDC ESF Battery Bank And Charger 111/211 Operability Weekly Surveillance
1/2BOL 8.6 (TS 3.8.6 LCOAR), Note 5.
BAR 1/(2)-21-E10, 125V DC PNL 111/113 (211/213) VOLT LOW
Operator rounds printout (supplied as attachment)

Facility comment:

The licensee agrees with the applicants' comments. This question has no correct answer, should be deleted from the exam and the exam grading adjusted accordingly.

QUESTION: 024 (1.00)

Unit 1 is starting up with the following conditions:

- Reactor power is at 7%.
- Due to IR Channel N35 reading a full decade lower than IR Channel N36, Channel N35 has been placed in BYPASS.

While withdrawing rods in Control Bank D, IR Channel N36 fails low and the LOSS OF DETECTOR VOLT light on the N36 drawer is lit.

Which one of the following is a required response for this condition?

a. Immediately trip the reactor and follow required actions in 1BEP-0, Reactor Trip or Safety Injection.

b. Immediately reduce power to less than P-6.

c. Immediately stop control rod withdrawal and suspend any other positive reactivity additions.

d. Continue power ascension to greater than P-10.

ANSWER: c.
REFERENCE:
Horse Notes, NI-3, Intermediate Range, Rev. 3
System Description, Gamma-Metric Source and Intermediate Range
Nuclear Instrumentation, Rev. 2
1B0A INST-1, Nuclear Instrumentation Malfunction Unit 1,
Attachment B, IR Channel Failure.

Applicants' comment:
IR channels N35 and N36 do not have lights labeled "LOSS OF DETECTOR VOLT". This was removed when the source and intermediate range instruments were modified to Gamma-Metrics instruments.

If a "Loss of Detector Volt" were to be inferred to mean a Loss of Instrument Power, then the reactor would trip because of the Loss of Channel N36 when not BYPASSED.

The stem of this question is technically inaccurate and confusing. Given the conditions, there was no way to answer it. This question is not technically correct and should be removed from the exam.

References:
TS 3.3.1, Reactor Trip System Instrumentation, condition G.
11-NI-XL-01, Gamma-Metric Source and Intermediate Range Nuclear Instrumentation System Lesson Plan, page 31
1B0A INST-1, Nuclear Instrumentation Malfunction Unit 1,
Attachment B, IR Channel Failure.

Facility comment:
The licensee agrees with the applicants' comments. This question is technically inaccurate, should be deleted, and the exam grading should be adjusted accordingly.

QUESTION: 028 (1.00)

Unit 2 start up is in progress with Reactor Power at 16% and all systems normally aligned.

- An electrical transient causes the 2A and 2C RCP Breakers to trip open.
- 2B and 2D RCPs remain running
- The RCP Breaker Position Reactor Trip Circuit malfunctioned and NO Reactor trip occurred.

If NO operator action is taken, what will happen within 2 minutes?

The reactor will . . .

a.   NOT automatically trip. RCS overpressure condition will NOT result.

b.   NOT automatically trip. Excessive KW/ft condition will NOT result.

c.   automatically trip. DNB condition will NOT result.

d.   automatically trip. Loss of heat sink condition will result.

ANSWER: c.
REFERENCE:
I1-RC-XL-02, Reactor Coolant Pump

Applicants' comment:
The portion of the stem that states "NO Reactor trip occurred" was somewhat confusing in context of what happened next. Recommend changing the wording of the stem to clarify it, such as "NO reactor trip occurred due to the failure of the RCP Breaker Position Reactor Trip circuit"; or providing a timeline, with at time 0, no reactor trip occurred.
No change to answers or grading is requested.

Facility comment:
The licensee agrees with the applicants' comments.

QUESTION: 034 (1.00)

Unit 1 was initially operating at 100% power when a safety injection occurred. The plant has entered 1BEP-0, Reactor Trip or Safety Injection, to respond to the event. Present Unit 1 conditions are as follows:

- 1A Safety Injection Pump is Out-of-Service
- Containment pressure is 7.3 psig
- 1B SI Pump, 1A and 1B CV Pumps, and 1A and 1B RH Pumps are all running
- All RCPs are running
- RCS pressure is 1620 psig and slowly lowering
- Both PZR PORVs are closed
- RCS Temperature is 541°F and slowly lowering

The crew has learned that the thrust bearing temperature for the 1B SI pump is presently 208°F and rising; therefore, the 1B SI pump was stopped.

While at Step 25 of 1BEP-0, Reactor Trip or Safety Injection, which one of the following actions would be CORRECT in response to the event?

a.   Stop RCPs. Stop dumping steam.

b.   DO NOT stop RCPs. Establish a maximum cool down rate of 50°F/Hr.

c.   DO NOT stop RCPs. Stop dumping steam.

d.   DO NOT stop RCPs. Continue to depressurize the RCS by dumping steam to the condenser from intact SGs.

ANSWER: c.
REFERENCE:
1BEP-0, Reactor Trip or Safety Injection

Applicants' comment:
It is unclear what has happened to pressure since entering 1BEP-0. Recommend placing information earlier in stem that we are at step 25. Also, add title of step 25, Maintain RCS Temperature Control.
No change to answers or grading is requested.

Facility comment:
The licensee agrees with the applicants' comments.

QUESTION: 035 (1.00)

Unit 2 is in MODE 4 with a plant cooldown in progress. The following plant conditions exist:

- RCS temperature is 300°F and slowly lowering due to the plant cooldown.
- 2A RH providing shutdown cooling.
- RCS pressure is 310 psig.
- LCO 3.4.12, Low Temperature Overpressure Protection (LTOP) System, is being met, and pressure relief capabilities for LTOP are met by the 2 PZR PORVs.

In these conditions, an inadvertent SI actuation occurred. With NO operator action, what would be the expected plant response? (NOTE: Unit 2 LTOP PORV Setpoint Curve is provided.)

    a.   One CV pump realigns to its ECCS lineup with the 2A RH suction relief valve being the first relief valve to lift.

    b.   BOTH CV pumps realign to their ECCS lineup causing pressure in the RCS to rise with the 2A RH suction relief valve being the first relief valve to lift.

    c.   One CV pump and BOTH SI pumps realign to their ECCS lineup causing pressure in the RCS to rise with the PORVs being the first relief valves to lift.

    d.   One CV pump realigns to its ECCS lineup with the PORVs being the first relief valves to lift.

ANSWER: a.
REFERENCE:
LCO 3.4.12 and Bases, LTOP System
I1-RH-XL-01, Residual Heat Removal System

Applicants' comment:
Better wording than "pressure relief capabilities for LTOP are met by the 2 PZR PORVs." would be "Both Przr PORVS are selected to ARMED LOW TEMP."
No change to answers or grading is requested.

Facility comment:
The licensee agrees with the applicants' comments.

QUESTION: 043 (1.00)

Reactor power is at 100% when the following events occur:

- The main turbine trips.
- The reactor does NOT automatically trip due to a failure of the Turbine Trip circuitry for the Reactor Trip System.

Assuming NO operator action, the reactor will still eventually automatically trip.

What Reactor Trip System Functions will initiate this reactor trip?

1. Overpower delta T.
2. Lo-Lo S/G Level.
3. Overtemperature delta T.
4. Pressurizer Pressure.

a. 1, 2, AND 3 ONLY.

b. 1 AND 4 ONLY.

c. 2 AND 3 ONLY.

d. 3 AND 4 ONLY.

ANSWER: d.
REFERENCE:
Main Steam System, I1-MS-XL-01

Applicants' comment:
Given the conditions stated, the assumption is made that all control systems are in their normal alignments.
The plant response to this event is as follows:
After the turbine trips, the steam dumps open fully on the load reject.
RCS temperature rises, and control rods step in to lower Tave.
SG PORVs cycle open.
Feedwater pumps maintain normal feedwater flow to the SGs.
The reactor will trip on OTDT.
The RCS pressure rise is controlled by the Pressurizer PORVs.

This scenario was run on the Byron simulator with all automatic reactor trips defeated to verify that pressure never rose high enough nor dropped low enough to actuate a High or Low Pressure trip.

The maximum pressure reached was 2340 psig, and the minimum pressure after 4.5 minutes of run time, was 1990 psig with pressure stabilizing slightly higher.

The only trip setpoint reached was OTDT. OTDT is a component of 3 of the answers, but is not listed by itself.

This question has no correct answer and should be deleted from the exam.

References:
Trends from simulator scenario are attached.

Facility comment:
The licensee agrees with the applicants' comments. This question has no correct answer, should be deleted from the exam and the exam grading adjusted accordingly.

This appears to be a design basis question, and would be correct if stated this way:
"What Reactor Trip Function are DESIGNED to initiate this back-up trip?" This would also require restating the plant conditions to clarify that, for example, the Pzr PORVs do NOT open.
The applicants answered the question based on plant response, as directed by the Appendix E Written Exam Guidelines.

QUESTION: 054 (1.00)

The following conditions exist in Unit 1:

- The Reactor is shut down in Mode 3.
- Containment pressure is 0.7 psig.
- You have made an emergency containment entry to investigate a steam leak, and are presently attempting to exit the containment through the personnel airlock doors.

While attempting to exit, you discover that the interior personnel airlock door will NOT open. Five minutes after mechanically opening the interior equalizing valve, it is discovered that pressure has still NOT equalized across the interior door.

Which of the following could be the reason(s) for this condition? (Consider each condition separately.)

1. The exterior equalizing valve is closed.
2. The exterior equalizing valve is open.
3. Containment pressure is too high to allow the inner airlock door to open.

a. 1 AND 3 ONLY.

b. 2 AND 3 ONLY.

c. 1 ONLY.

d. 2 ONLY.

ANSWER: d.
REFERENCE:
BAP 1450-8, Primary Containment Equipment/Emergency Hatch
Personnel Airlock Doors Operation

Applicants' comment:
The question states there is a steam leak in containment, and that containment pressure is (currently) 0.7 psig. A steam leak inside containment will cause containment pressure to rise. Given the information, it is impossible to determine if pressure is rising faster than the interior equalizing valve can allow airlock pressure to equalize with containment pressure.
The interior airlock door opens inward to containment, and the airlock door is approximately 5' wide by 7' tall. This results in a surface area of 5040 square inches. For the door to be held closed with a force of 100 ft-lbf, a DP of only 0.02 psid is required.
Since it is impossible to determine from the information provided whether the interior equalizing valve can equalize faster than an unstated size steam leak can pressurize containment, and that a very small DP is all that is required to hold the door closed, containment pressure COULD (as asked) be too high to allow the inner airlock door to be opened.
This results in choice "b" also being correct.

This question has 2 correct answers, "b" and "d".

References:
BAP 1450-8, Primary Containment Equipment/Emergency Hatch
Personnel Airlock Doors Operation

Facility comment:
The licensee agrees with the applicants' comments. This question has 2 correct answers, and the exam grading should be adjusted accordingly.

QUESTION: 066 (1.00)

Which of the following prints would show the Flow Control Loop for the 0VC03CA Make-Up Fan?

        a.   3040 series of prints

        b.   3041 series of prints

        c.   4030 series of prints

        d.   4031 series of prints

ANSWER: d.
REFERENCE:
0-4031VC04

Applicants' comment:
Change the question to supply examples of the various drawings and ask to determine what it does. There were no names supplied for the numbers, this is a memory test without any context.
No change to answers or grading is requested.

Facility comment:
The licensee agrees with the applicants' comments.

QUESTION: 076 (1.00)

The following Unit 1 plant conditions exist:

- A LOCA has occurred
- Command and Control has been transferred to the EOF
- The crew has transitioned to 1BFR-C.1, Response to Inadequate Core Cooling
- Containment pressure is 4 psig and stable
- CETC indicate 1250°F and rising
- SG levels are as follows:

1A	1B	1C	1D
0% NR	20% NR	0% NR	15% NR

- RCP #1 seal ΔPs are as follows:

	1A	1B	1C	1D
#1 seal ΔP (psid)	250	125	275	225

The crew is at step 17 in 1BFR-C.1 to check if RCPs should be started. The Unit RO recommends starting ONLY the 1D RCP to provide cooling to the core.

Which of the following is the correct response to the RO recommendation:

a.   Direct the RO to start ONLY the 1D RCP.

b.   Obtain authorization from the STA to start ONLY the 1D RCP.

c.   Direct the RO to start the 1B and 1D RCP.

d.   Obtain authorization from the EOF to start all RCPs.

ANSWER: c.
REFERENCE:
1BFR-C.1, Response to Inadequate Core Cooling
FR-C.1 Background Information for WOG Emergency Response
Guideline
BAP 1310-10, revision 10, HU-AA-104-101, Procedure Use and
Adherence, Byron Addendum
EP-AA-112-100-F-01, Shift Emergency Director Checklist

Applicants' comment:
WOG background Step Description Table for FR C.1, 29: "To temporarily restore core cooling, the operator is instructed to start RCPs one at a time until CETCs are <1200°F."

Step 17 of 1BFR C.1 directs starting "RCP in any available idle RCS cooling loop", then rechecking CETCs and starting more RCPs as needed until CETCs <1200°F, rechecking CETCs between starts.

RCPs are to be started 1 at a time, so choice "a" is correct. Choice "c" states to start both RCPs, which is not true without checking CETCs between RCP starts.

The correct answer should be changed from "c" to "a".

References:
I1-XL-FR-02, BFR C series lesson plan

WOG FR-C.1, Background information (HFRC1BG)

Facility comment:
The licensee agrees with the applicants' comments. The correct answer is choice "a", and the exam grading should be adjusted accordingly.

QUESTION: 089 (1.00)

Unit 2 is operating at 100% power. The 2A DG has been INOPERABLE for 24 hours due to planned maintenance. The Unit Supervisor has just declared the 2B containment spray pump as INOPERABLE due to a motor failure.

AT THIS TIME, and based upon the selections below, what is/are REQUIRED Technical Specification action(s) for this condition? (NOTE: TS LCOs 3.6.6 and 3.8.1 are attached.)

    1.   Restore containment spray train B to OPERABLE status within 7 days.
    2.   Enter LCO 3.0.3 Immediately.
    3.   Be in MODE 3 within 6 hours.

    a.   1 ONLY.

    b.   1 AND 2 ONLY.

    c.   2 ONLY.

    d.   3 ONLY

ANSWER: 089 (1.00)
a.
REFERENCE:
TS LCO and Base 3.6.6, Containment Spray and Cooling System
TS LCO 3.8.1, AC Sources - Operating

Applicants' comment:
Suggest including a timeline so that the candidate evaluates what action is to be taken at a specific time. Some confusion as to what was being asked.
No change to answers or grading is requested.

Facility comment:
The licensee agrees with the applicants' comments.

QUESTION: 095 (1.00)

The Station has experienced a large break Loss of Coolant Accident on Unit 2. The Shift Manager has assumed the duties of the Shift Emergency Director and is in Command and Control.

Which of the following is a list of the Shift Emergency Director's Non-delegable responsibilities?

      a.   Classification of the Emergency
               Notification of the Site Vice President
               Notification of the State and Federal Agencies
               Site Assembly / Accountability

      b.   Classification of the Emergency
               Authorization for Emergency Dose Exposure
               Notification of the State and Federal Agencies
               Determination of Protective Action Recommendations to the State

      c.   Classification of the Emergency
               Authorization for Emergency Dose Exposure
               Site Assembly / Accountability
               Determination of Protective Action Recommendations to the State

      d.   Classification of the Emergency
               Notification of the Site Vice President
               Notification of State and Federal Agencies
               Determination of Protective Actions for Plant Personnel

ANSWER: b.
REFERENCE:
LS-AA-104-1000, 50.59 Resource Manual
LS-AA-128, Regulatory Review of Proposed Changes to the Approved
Fire Protection Program

Applicants' comment:
Choice "b" has an incomplete answer. It states one of the Shift Emergency Director's non-delegable responsibilities is "Notification of State and Federal Agencies". This statement implies the act of using the NARS phone to make notifications. In fact, the Shift Emergency Director approves the NARS and ENS forms used for the notifications. The actual notification is done by a designated communicator. This distinction led the applicants to reject choice "b" as a possible correct answer.

The list of non-delegable duties, according to EP-AA-1000, Standardized Radiological Emergency Plan, includes this statement: "Notification of offsite authorities (approval of state/local and NRC notifications)".

This question has no correct answer and should be deleted from the exam.

**References:**
EP-AA-1000, Standardized Radiological Emergency Plan

Facility comment:
The licensee agrees with the applicants' comments. This question has no correct answer, should be deleted from the exam and the exam grading adjusted accordingly.

DC BUS 111 BUS VOLTS - BYR5037				1	2	3
Choices:		Min: 127.6	Max: 140			
min 127.6. If < 127.6, Notify US to evaluate for Operability. If <= 128.5 trend data and notify US of trend.				Volts	Volts	Volts
Shift: Night	Mode: All	Day of Week: All	Day of Month: All		1DC05E1	
Alarms: If reading is > 140 then Contact EMD to adjust charger voltage. If voltage cannot be adjusted - declare the charger Inoperable.' If reading is < 126.7 then IMMEDIATELY notify US to evaluate for operability' If reading is <= 128.5 then Trend data for previous week. Determine cause and correct as necessary.'						

DC BUS 111 BATT VOLTS - BYR5038				1	2	3
Choices:		Min: 127.6	Max: 132			
min 127.6, max 132. If < 127.6, Notify US to evaluate for Operability. If <= 128.5 trend data and notify US of trend.				Volts	Volts	Volts
Shift: Night,Day	Mode: All	Day of Week: All	Day of Month: All		1DC05E2	
Notes: >132 VDC BUT <137 VDC ACCEPTABLE IF BATTERY ON EQUALIZE (PER BOP DC-5)						
Alarms: If reading is < 127.6 then IMMEDIATELY notify US to evaluate for Operability' If reading is <= 128.5 then Trend data for previous week. Determine cause and correct as necessary.'						

DC BUS 111 BATT AMPS - BYR5039				1	2	3
Choices:		Min: -10	Max: 10			
min -10, max 10				Amps	Amps	Amps
Shift: Night,Day	Mode: All	Day of Week: All	Day of Month: All		1DC05E3	

DC BUS 111 ESF XTIE BKR POSITION - BYR5040				1	2	3
Choices: OFF,ON		Min:	Max:			
Select "OFF", "ON". If OFF notify US to evaluate for Operability.						
Shift: Night	Mode: All	Day of Week: All	Day of Month: All		1DC05E DF1	
Alarms: If reading is = "ON" then Notify US to evaluate for operability'						

DC 111 CHARG DC VOLTS - BYR5035				1	2	3
Choices:		Min: 127.6	Max: 132			
min 127.6, max 132. If < 127.6, Notify US to evaluate for Operability. If <= 128.5 or >= 131 trend data and notify US of trend. > 132 VDC acceptable if battery is on equalize.				Volts	Volts	Volts
Shift: Night	Mode: All	Day of Week: All	Day of Month: All		1DC03EV	
Notes: >132 VDC BUT < 137 VDC ACCEPTABLE IF BATTERY ON EQUALIZE (PER BOP DC-5)						
Alarms: If reading is < 127.6 then NOTIFY UNIT SUPV TO EVALUATE FOR OPERABILITY' If reading is >= 131 then Trend data for previous week. Determine cause and correct as necessary.' If reading is <= 128.5 then Trend data for previous week. Determine cause and correct as necessary.'						

DC BUS 111 CHARG AMPS - BYR5036				1	2	3
Choices:		Min: 0	Max:			
min 0				Amps	Amps	Amps
Shift: Night	Mode: All	Day of Week: All	Day of Month: All		1DC03EA	

***DIV 11 MEER TEMPERATURE - BYR5000				1	2	3
Choices:		Min:	Max: 108			
max 108. Recorded on TRM surveillance. If > 108 F, Notify US to evaluate for Operability.						
Shift: Night,Day	Mode: All	Day of Week: All	Day of Month: All		BYOP517	
Alarms: If reading is > 108 then IMMEDIATELY Notify US for Operability Assessment. Take IMMEDIATE Action to reduce temperature.'						

BUS 111 INV BATT DC AMPS - BYR5041				1	2	3
Choices:		Min: 0	Max: 5			
min 0, max 5				Amps	Amps	Amps
Shift: Night	Mode: All	Day of Week: All	Day of Month: All		1IP05E 3AM	

BUS 111 INV AC AMPS - BYR5042				1	2	3
Choices:		Min: 13	Max: 60			
min 13, max 60.				Amps	Amps	Amps
Shift: Night	Mode: All	Day of Week: All	Day of Month: All		1IP05E 2AM	
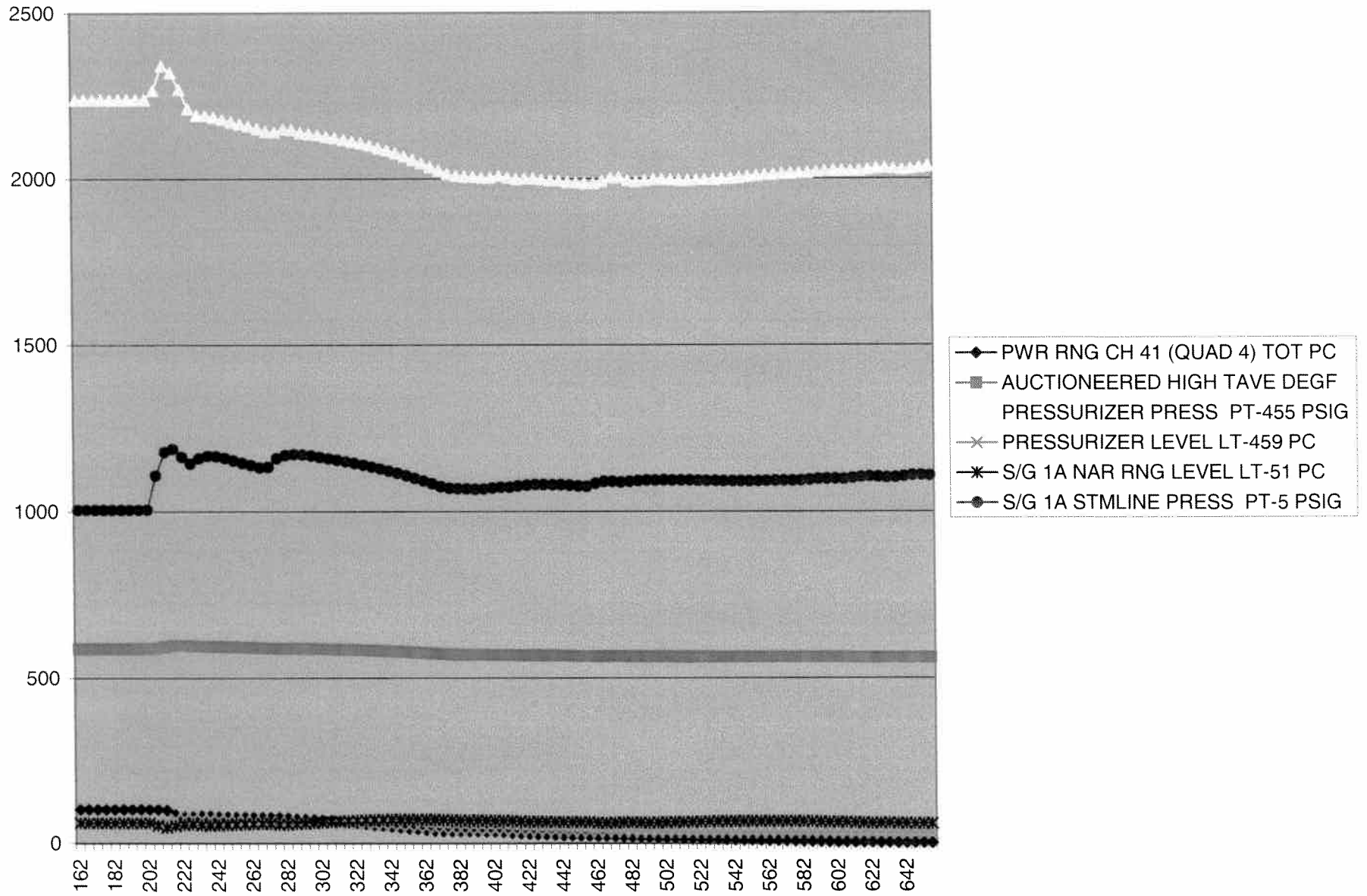
Legend:
- PWR RNG CH 41 (QUAD 4) TOT PC
- AUCTIONEERED HIGH TAVE DEGF PRESSURIZER PRESS PT-455 PSIG
- PRESSURIZER LEVEL LT-459 PC
- S/G 1A NAR RNG LEVEL LT-51 PC
- S/G 1A STMLINE PRESS PT-5 PSIG

	PWR RNG CH 41 (QUAD 4) TOT PC	AUCTION EERED HIGH TAVE DEGF	PRESSU RIZER PRESS PT-455 PSIG	PRESSU RIZER LEVEL LT-459 PC	S/G 1A NAR RNG LEVEL LT-51 PC	S/G 1A STMLINE PRESS PT-5 PSIG
162.35	100.7687	587.1534	2238.267	60.00787	60.01085	1004.414
167.35	100.7695	587.1531	2238.267	60.00787	60.01085	1004.409
172.35	100.7698	587.1532	2238.27	60.00787	60.01085	1004.407
177.35	100.7697	587.1531	2238.266	60.00787	60.01219	1004.409
182.35	100.77	587.153	2238.251	60.00787	60.01085	1004.408
187.35	100.7713	587.153	2238.235	60.00787	60.01085	1004.404
192.35	100.77	587.1528	2238.239	60.00787	60.01085	1004.405
197.35	100.7703	587.1526	2238.246	60.00559	60.01085	1004.404
202.35	100.7706	587.1525	2238.265	60.00559	60.01085	1004.402
207.35	101.0749	587.571	2265.23	60.97015	52.60966	1107.375
212.35	98.49873	592.4872	2339.961	66.60964	45.98392	1177.756
217.35	84.77744	596.5845	2319.321	72.17179	51.04259	1187.495
222.35	78.84396	596.9988	2268.046	74.13503	54.99653	1163.627
227.35	78.91891	595.4146	2211.288	73.10223	56.2276	1142.664
232.35	81.22346	593.9214	2190.992	71.63491	53.3569	1159.105
237.35	80.91021	593.6541	2190.025	71.28912	52.61772	1166.43
242.35	78.74953	593.3567	2185.211	70.88419	53.50204	1164.963
247.35	77.91787	592.6741	2178.01	69.96058	54.24391	1159.796
252.35	77.04865	591.8231	2171.055	68.73441	55.15781	1152.6
257.35	77.17763	590.9116	2163.84	67.41496	55.983	1145.012
262.35	77.06173	590.113	2157.822	66.28206	56.79744	1138.268
267.35	75.86779	589.3034	2150.824	65.07636	57.62801	1131.368
272.35	75.78608	588.2419	2141.942	63.55217	57.63338	1133.046
277.35	76.36429	587.3206	2139.424	62.7878	54.83794	1159.162
282.35	74.52579	587.4744	2148.264	62.91975	55.38091	1168.739
287.35	71.81681	587.4049	2147.11	62.73548	56.88345	1171.385
292.35	71.03969	587.0204	2138.441	62.25092	58.52039	1170.13
297.35	70.01539	586.5345	2134.72	61.53661	60.25411	1166.921
302.35	68.60223	585.9674	2130.616	60.75176	62.04426	1162.742
307.35	67.16048	585.3846	2126.537	59.9601	63.77529	1158.039
312.35	64.97806	584.7588	2122.144	59.12976	65.31547	1153.876
317.35	62.09878	584.0411	2117.091	58.20842	66.64868	1149.493
322.35	60.18363	583.2924	2112.002	57.26888	67.79105	1144.432
327.35	57.62906	582.53	2106.564	56.29295	68.8232	1139.106
332.35	54.20388	581.629	2099.846	55.14185	69.65108	1133.663
337.35	52.0861	580.5959	2092.413	53.86108	70.2048	1127.576
342.35	49.81591	579.5925	2085.002	52.5985	70.64292	1121.109
347.35	46.61554	578.4839	2076.506	51.19034	70.98431	1114.451
352.35	44.09926	577.1875	2066.772	49.58426	71.06494	1107.146
357.35	42.2138	575.9276	2057.241	48.01457	71.01387	1099.276
362.35	39.55425	574.6116	2047.051	46.37209	70.97086	1091.302
367.35	36.89569	573.123	2035.639	44.55216	70.75045	1082.892
372.35	35.83499	571.6484	2024.675	42.78456	70.36339	1073.936
377.35	35.75156	570.323	2015.107	41.22398	69.75054	1069.258
382.35	35.96127	569.2822	2009.074	40.17638	68.23455	1068.021
387.35	35.71447	568.7871	2006.713	39.64861	67.8233	1067.334
392.35	35.15383	568.5346	2005.118	39.2414	67.90125	1066.198
397.35	34.70794	568.2396	2003.281	38.80348	67.73729	1066.739
402.35	34.11245	567.97	2003.74	38.55779	67.02767	1069.826
407.35	32.60308	568.0497	2007.864	38.54641	67.04918	1071.691

	PWR RNG CH 41 (QUAD 4) TOT PC	AUCTIONEERED HIGH TAVE DEGF	PRESSURIZER PRESS PT-455 PSIG	PRESSURIZER LEVEL LT-459 PC	S/G 1A NAR RNG LEVEL LT-51 PC	S/G 1A STMLINE PRESS PT-5 PSIG
412.35	30.24095	567.8267	2002.923	38.10622	67.14326	1072.225
417.35	28.88126	567.1293	1998.767	37.39417	65.66758	1075.525
422.35	27.89249	566.8556	2000.01	37.20422	64.60316	1078.522
427.35	26.62041	566.8027	2000.743	37.04498	64.32363	1080.158
432.35	25.53354	566.4956	1997.04	36.55928	63.9742	1079.98
437.35	24.61584	566.0731	1995.114	36.09065	63.75109	1079.567
442.35	23.63242	565.7756	1993.379	35.68458	63.69734	1079.449
447.35	22.85292	565.3262	1989.977	35.06467	63.4151	1077.728
452.35	22.41838	564.874	1987.795	34.56533	63.42586	1075.682
457.35	21.89886	564.6046	1986.491	34.19793	63.67046	1074.548
462.35	21.44555	564.2225	1985.644	33.8476	61.68139	1083.824
467.35	21.03618	564.4017	1992.646	34.01822	60.38582	1089.416
472.35	20.25565	564.8938	2002.346	34.32874	61.05243	1089.282
477.35	19.36368	564.9343	2002.896	34.18087	62.86677	1087.315
482.35	18.41684	564.3671	1994.057	33.54731	62.63292	1089.444
487.35	17.57261	563.811	1990.542	33.18105	61.77278	1091.787
492.35	16.728	563.8298	1994.326	33.19584	61.73246	1093.172
497.35	16.02612	563.9135	1997.905	33.2038	62.35607	1093.51
502.35	15.37333	563.8676	1998.207	33.04228	63.00655	1093.627
507.35	14.75587	563.6624	1996.728	32.78635	63.42317	1093.498
512.35	14.10053	563.4257	1995.555	32.54521	63.72691	1093.307
517.35	13.50903	563.2662	1995.546	32.36436	64.09246	1092.933
522.35	12.97182	563.1729	1996.259	32.22331	64.54672	1092.409
527.35	12.46518	563.0977	1997.212	32.09364	65.0198	1091.934
532.35	11.92215	563.0235	1998.298	31.9708	65.4418	1091.532
537.35	11.41221	562.9576	1999.663	31.86502	65.80467	1091.247
542.35	10.9662	562.9125	2001.444	31.77971	66.12185	1091.037
547.35	10.50436	562.8947	2003.661	31.7217	66.39333	1090.994
552.35	10.04583	562.8942	2006.152	31.67961	66.60299	1091.133
557.35	9.541783	562.9011	2008.733	31.64548	66.74545	1091.411
562.35	8.98876	562.9052	2011.232	31.61023	66.81533	1091.779
567.35	8.404198	562.8972	2013.488	31.56245	66.80457	1092.159
572.35	7.794109	562.8692	2015.332	31.49421	66.72395	1092.478
577.35	7.179295	562.8139	2016.561	31.39752	66.58147	1092.708
582.35	6.576334	562.7233	2017.115	31.26558	66.35032	1093.141
587.35	6.02394	562.5959	2017.757	31.13819	65.61383	1095.297
592.35	5.51354	562.5286	2019.688	31.09269	64.71875	1097.79
597.35	5.063781	562.5612	2022.495	31.10065	64.20805	1098.643
602.35	4.632026	562.5901	2024.254	31.04377	64.1731	1098.066
607.35	4.236582	562.4971	2023.981	30.86633	63.95807	1097.953
612.35	3.90267	562.2993	2023.295	30.66159	63.04149	1100.232
617.35	3.609173	562.1636	2024.548	30.57401	61.96363	1103.549
622.35	3.333084	562.222	2027.93	30.61837	61.36153	1105.092
627.35	3.07329	562.3232	2031.138	30.6559	61.46368	1104.108
632.35	2.814812	562.3289	2031.346	30.51031	61.75934	1102.331
637.35	2.557367	562.093	2028.536	30.17931	61.38573	1102.905
642.35	2.317908	561.7629	2026.619	29.90177	60.44495	1105.632
647.35	2.115152	561.6361	2028.385	29.85286	59.81867	1108.269
652.35	1.930564	561.8006	2032.77	29.9666	59.79179	1109.287
657.35	1.763336	561.9569	2036.507	30.04737	60.01757	1108.158