



March 5, 2012

SERIAL: HNP-12-032

Mr. Michael A. Junge, Region II
United States Nuclear Regulatory Commission
245 Peachtree Center Ave., NE, Suite 1200
Atlanta, GA 30303-1257

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
REACTOR AND SENIOR REACTOR OPERATOR
INITIAL EXAMINATIONS 05000400/2012301

Dear Mr. Junge:

Enclosed is the post-examination package for the Reactor and Senior Reactor Operator Initial Examinations given at the Harris Nuclear Plant February 13, 2012, through February 28, 2012.

Included from the administration of the Written Examination are the student cover sheets, answer sheets, master examinations, answer key, log of applicant questions and answers, and the student seating chart. Also, pertaining to the SRO Written Examination, are two post-examination comments (Question #79 and #93).

If you have any questions regarding this submittal, please contact me at (919) 362-3517.

Sincerely,

A handwritten signature in black ink, appearing to read 'Scotty Scott', written over a horizontal line.

Scotty Scott
Superintendent – Operations Training
Harris Nuclear Plant

JMS/mgw

Enclosures

- c: Mr. J. D. Austin (NRC Senior Resident Inspector, HNP) w/o Enclosures
- Mr. V. M. McCree (NRC Regional Administrator, Region II) w/o Enclosures
- Ms. A. T. Billoch-Colon (NRR Project Manager, HNP) w/o Enclosures

HNP Licensed Operator Written Exam question #79 Post Exam Comment

Comment for SRO question #79 is that the correct answer is A. EOP-EPP-001, page 56 contains a Caution that states “SG pressures should be maintained above 130 PSIG. This will prevent injection of accumulator nitrogen into the RCS AND ensure SG pressures remain above the minimum required for TDAFW pump OPERABILITY (105 PSIG).” The EOP User’s Guide states in section 5.3.1 “Entry into EPPs and FRPs” that “In general, NOTES and CAUTIONS apply to the step which they precede. A NOTE or CAUTION which precedes the first operator action step may also apply to the entire procedure.” Therefore, this CAUTION applies to step 35, the step to depressurize the intact SGs.

The HNP EOP Setpoint Study (page 54) also states a value of 130 psig for “Minimum SG pressure which prevents accumulator injection nitrogen injection. Refer to background document of ECA 0.0”

During the depressurization in EOP-EPP-001, the caution limits the pressure reduction to a value above 130 psig. After getting to less than 230 psig a 50 psig control band is established. This control band is consistent with the EOP writer’s guide and standard operation’s practices and was not derived from the EOP basis document. The Step Deviation Document for EPP-001 states “Added instructions to maintain pressure within a specified band (50 PSI). Specifying a control band is consistent with EOP Writers Guide and standard operations practices.”

The question asks, “In accordance with EPP-001, Loss of AC Power to 1A-SA and 1B-SB Busses, which ONE of the following is (1) the MINIMUM pressure the intact SGs will be depressurized to . . .” Since the question asked for a “minimum” pressure and not the control band, answer A would be considered correct based on the references stated.

There is no contention about the fact that the second half of the question was appropriately answered by either answer A or C.

References:

Exam question 79

EOP-EPP-001 page 56

EOP USER’S GUIDE page 23

EOP SETPOINT STUDY pages 52, 102,103

ECA-0.0 Background page 122

SDD-EPP-001 page 20

79. Given the following plant conditions:

- The plant was operating at 100% power
- The ASI pump is under clearance
- A loss of Offsite Power has occurred
- EDG 'A' and 'B' started but neither EDG output breaker, 106 nor 126, will close

In accordance with EPP-001, Loss of AC Power to 1A-SA and 1B-SB Busses, which ONE of the following is (1) the MINIMUM pressure that the intact SGs will be depressurized to AND (2) what will this pressure reduction accomplish?

A. (1) 130 psig

(2) Reduces the ΔP across RCP seals to minimize leakage and loss of RCS inventory.

B. (1) 130 psig

(2) Maximizes Natural Circulation flow to allow Reactor Vessel Head to cool since CRDM cooling fans are unavailable.

C. (1) 180 psig

(2) Reduces the ΔP across RCP seals to minimize leakage and loss of RCS inventory.

D. (1) 180 psig

(2) Maximizes Natural Circulation flow to allow Reactor Vessel Head to cool since CRDM cooling fans are unavailable.

QUESTIONS REPORT
for 2012 NRC SRO REV FINAL

79

1. *Plausibility and Answer Analysis*

Reason answer is correct: With ASI pumps not available the SG pressure is reduced 230 psig while cooling down the RCS cold legs as close to 100°F/hr as possible. Once SG pressure is below 230 psig the pressure is controlled between 180 to 230 psig in order to minimize RCS inventory loss while cooling the RCP seals in a controlled manner.

- A. *Incorrect. The first part is plausible because 130 psig is the lower end of the control band for SG pressure following depressurizing during FRP-C.1. The second part is the correct basis for these actions. SG pressure reduction will cause an RCS cooldown and pressure reduction which will minimize RCS leakage through the RCP seals*
- B. *Incorrect. The first part is plausible because 130 psig is the lower end of the control band for SG pressure following depressurizing during FRP-C.1. The second part is plausible because the CRDMs are not available and the SG pressure reduction will promote RCS natural circulation, but natural circulation flow does not provide any flow in the Upper head region of the Reactor.*
- C. *Correct.*
- D. *Incorrect. The first part of the answer is correct. The second part is plausible because the CRDMs are not available and the SG pressure reduction will promote RCS natural circulation, but natural circulation flow does not provide any flow in the Upper head region of the Reactor.*

QUESTIONS REPORT

for 2012 NRC SRO REV FINAL

EPE: 055 Loss of Offsite and Onsite Power (Station Blackout)

055EG2.4.9 Knowledge of low power/shutdown implications in accident (e.g., loss of coolant accident or loss of residual heat removal) mitigation strategies.
(CFR: 41.10 / 43.5 / 45.13)

Importance Rating: 3.8 4.2

Technical Reference: EPP-001, Step 35, Page 56, Rev 40 and WOG
background document for ECA-0.0 (EPP-001) page 117
Rev. 2

References to be provided: None

Learning Objective: EPP-001, 002 & 003, Loss of All AC Power and recovery
w/ or w/o Safety Injection, EOP3-7 Obj. 6

Question Origin: New

Comments: None

Tier/Group: T1G1

SRO Justification: Assessing plant conditions (Normal, abnormal, or
emergency) and the prescribing a procedure or section
of a procedure to mitigate, recover or with which to
proceed.

LOSS OF AC POWER TO 1A-SA AND 1B-SB BUSES

INSTRUCTIONS

RESPONSE NOT OBTAINED

CAUTION

- SG pressures should be maintained above 130 PSIG. This will prevent injection of accumulator nitrogen into the RCS **AND** ensure SG pressures remain above the minimum required for TDAFW pump OPERABILITY (105 PSIG).
- Level should be maintained greater than 25% [40%] in at least one intact SG during the depressurization to ensure adequate heat sink. (Depressurization should be stopped in at least one SG prior to its level decreasing below 25% [40%.])

NOTE

- The SGs should be depressurized at a rate sufficient to maintain a cooldown rate in the RCS cold legs near 100° F/HR. This will minimize RCS inventory loss while cooling the RCP seals in a controlled manner.
- With no seal injection in service, reducing RCS pressure to less than 1710 PSIG within 2 HOURS minimizes the probability of RCS seal failure.
- SG depressurization may result in loss of PRZ level and reactor vessel upper head voiding. Do **NOT** stop SG depressurization to prevent these occurrences.
- During a loss of all AC power, SG C PORV can be controlled from the MCB for a limited number of operations.

35. Depressurize Intact SGs To 230 PSIG:

- a. Maintain cooldown rate in RCS cold legs - LESS THAN 100° F/HR
- b. Dump steam using all intact SG PORVs:
 - 1) Operate SG C PORV from MCB.
 - 1) Locally operate SG C PORV using OP-126, "MAIN STEAM, EXTRACTION STEAM, AND STEAM DUMP SYSTEMS", Section 8.2.
 - 2) Locally operate SG A and B PORVs using OP-126, "MAIN STEAM, EXTRACTION STEAM, AND STEAM DUMP SYSTEMS", Section 8.2.
- c. SG pressures - LESS THAN 230 PSIG
- c. **WHEN** SG pressures decrease to less than 230 PSIG, **THEN** do Step 35d.
- d. Control SG PORVs to maintain SG pressures between 230 PSIG and 180 PSIG.
- Continue with Step 36.

5.3 Control Room Usage of EPPs, Foldouts, and FRPs

5.3.1 Entry into EPPs and FRPs

The cover page of each procedure presents the procedure number and title. The PURPOSE/ENTRY CONDITIONS section presents a detailed description of the conditions for which the procedure was written. Operator action steps are presented in the two-column format. In this format, each step in the left-hand column contains a high-level statement which describes the task to be performed.

Certain information is emphasized by not following the standard two-column format. This information consists of:

- CAUTIONS - these contain information about potential hazards to personnel or equipment, and may also provide guidance on how the hazard can be avoided.
- NOTES - these contain descriptive or explanatory information not as critical as CAUTIONS but still intended to aid the operator in performing subsequent action step(s).

In general, NOTES and CAUTIONS apply to the step which they precede. A NOTE or CAUTION which precedes the first operator action step may also apply to the entire procedure.

When directed to "GO TO Step 1" of an EPP or FRP, the operator should begin with the cover page and PURPOSE/ENTRY CONDITIONS of the respective procedure. After verifying that current plant conditions are consistent with the purpose of the entered procedure, and observing any initial NOTES and/or CAUTIONS, the operator should proceed to the first action step as directed.

5.3.2 Format of Action Steps

If the high-level task requires multiple actions, then subtasks are specified. Following each task or subtask, the expected response or result is given in CAPITAL LETTERS, separated from the task by a dash.

Example: 6. PRZ Level - INCREASING

Example: 12. Identify Any Faulted SG:

- a. Check for any of the following:
 - Any SG pressure -
DECREASING IN AN
UNCONTROLLED MANNER
 - Any SG - COMPLETELY
DEPRESSURIZED

(continued on next page)

EOP SETPOINT STUDY

4.0 FOOTNOTE VALUES

PARAMETER DESIGNATOR: 0

PARAMETER DESCRIPTION: STEAMLINER PRESSURE VALUES

<u>FOOTNOTE NUMBER</u>	<u>FOOTNOTE/EXPLANATION</u>	<u>VALUE</u>
07	Minimum SG pressure which prevents accumulator nitrogen injection. Refer to background document of ECA-0.0 /From Section 5.27.	130 PSIG
08	Minimum SG pressure which prevents injection of accumulator nitrogen into the RCS, plus a margin for controllability. Refer to Background Document for guideline ECA-0.0. /From the ERG Footnote Basis Document 100 PSI is used as the "margin of controllability" and added to the value of Footnote 0.07.	230 PSIG
09	Condensate pump discharge header pressure for minimum flow operation on recirculation, minus allowances for normal channel accuracy. /Condensate booster pump discharge pressure minus allowances for instrument uncertainties and pressure drops, rounded to 500 PSIG for use in EOPs. (ERG Rev. 1C (based on DW-89-068) changed setpoint to "condensate discharge header pressure for minimum flow operation on recirculation, minus allowances for normal channel accuracy". The basis for the change is that for the reference plant, condensate pump recirculation flow is greater than that required to remove decay heat, and thus ensures adequate flow will be delivered to the SGs. Since SHNPP uses the condensate booster pumps to control header pressure, evaluation of condensate discharge head and recirculation flow is not applicable. The setpoint, 500 PSIG, is derived by subtracting 100 PSI from the nominal 600 PSIG condensate booster pump pressure specified in the FRP-H.1.)	500 PSIG
10	SG pressure, including allowances for normal channel accuracy, corresponding to the RCS pressure requirement for placing RHR System in service. /From Reference 2.2.5.16.	440 PSIG

EOP SETPOINT STUDY

5.27 SG Pressure To Prevent Injection Of SI Accumulator Nitrogen Into The RCS.

NOTE: The value for Footnote 0.07 used in the EOPs is derived based on ERG Maintenance Item DW-06-014. This derivation supersedes that in Calculation # HNP-I/INST-1014.

Minimum SG pressure which prevents injection of accumulator nitrogen into the RCS. Refer to applicable Background Documents. (Footnote 0.07)

From the background document:

$$[P_1 V_1]^\gamma = [P_2 V_2]^\gamma$$

where:

P_1 = initial accumulator pressure

P_2 = final accumulator pressure

V_1 = initial nitrogen volume

V_2 = final nitrogen volume

γ = 1.00

The following conservative assumptions are made:

P_1 = maximum N_2 pressure allowed by Tech Spec 3.5.1
= 665.0 psig
= 679.7 psia

V_1 = total accumulator volume (neglecting the volume of the discharge piping) from FSAR Table 6.3.2-1 = 1450 ft³

Minimum water volume is 66% from Tech Spec 3.5.1, a minimum value is used to conservatively maximize the nitrogen volume.

From SHNPP Curve D-34:

66% level = 7430 gallons

= 7430 gallons x 0.13368 ft³/gal = 993 ft³

EOP SETPOINT STUDY

5.27 SG Pressure To Prevent Injection Of SI Accumulator Nitrogen Into
The RCS (continued)

Therefore, $V_1 = 1450 \text{ ft}^3 - 993 \text{ ft}^3 = 457 \text{ ft}^3$

$$P_1 = P_2 \left[\frac{V_1}{V_2} \right]^{\gamma} = 679.7 \text{ PSIA} \left[\frac{457}{1450} \right]^{\gamma} = 214.1 \text{ PSIA}$$

RCS to SG delta P from Section 6.3.6 of this document = 77.5 PSI.

Therefore, SG pressure to prevent nitrogen injection is:

$$\begin{aligned} 214.1 \text{ PSIA} - 77.5 \text{ PSI} &= 136.6 \text{ PSIA} \\ &= 121.9 \text{ PSIG} \end{aligned}$$

Value rounded up 130 PSIG for conservatism.

STEP: Depressurize Intact SGs To (0.08) PSIG

PURPOSE: To depressurize the intact steam generators

BASIS:

Step 16 depressurizes the intact SGs, thereby reducing RCS temperature and pressure to reduce RCP seal leakage and minimize RCS inventory loss. The advantages to performing this action, as well as restrictions that apply during the action, are detailed in Subsection 2.3.

During SG depressurization, SG level must be maintained above the top of the SG U-tubes in at least one SG. Maintaining the U-tubes covered in at least one SG will ensure that sufficient heat transfer capability exists to remove heat from the RCS via either natural circulation or reflux boiling after the RCS saturates. Step 16a requires that SG level be in the narrow range in at least one SG before SG depressurization is initiated in Step 16b. If level is not in the narrow range in at least one SG, RNO 16a instructs the operator to maintain maximum AFW flow until narrow range level is established in one SG. When narrow range level is established, SG depressurization can be started or continued via Step 16b.

Step 16b instructs the operator to reduce SG pressures by depressurizing the intact SGs. Depressurization should be accomplished by opening the PORVs on the intact SGs to establish a maximum steam dump rate, consistent with plant specific constraints. The step is structured assuming that the operator can open and control SG PORVs from the control room. This structure assumes that the PORVs are air-operated and have dc control power and pneumatic power (i.e., either air reservoirs or nitrogen bottles) available. Some plants may not have the capability to open the SG PORVs from the control room. These plants should evaluate their capability to accomplish this step locally via PORV handwheels. Such an evaluation should consider accessibility and communications necessary to accomplish local PORV operation.

Once depressurization is initiated, maintenance of a specified rate is not critical. The depressurization rate should be sufficiently fast to expeditiously reduce SG pressures, but not so fast that SG pressures cannot be controlled. It is important that the depressurization not reduce SG pressures in an uncontrolled manner that undershoots the pressure limit, thus permitting potential introduction of nitrogen from the accumulators into the RCS.

LOSS OF AC POWER TO 1A-SA AND 1B-SB BUSES

<u>EOP Step</u>	<u>ERG Step</u>	<u>Justification of Deviation</u>
24	16b, c, d and e	<p>ERG I-16b: Specified local operations of SG PORVs A and B in instruction column since these valves require AC power for remote operations. Added plant-specific procedure reference for local operations.</p> <p>Revised target SG pressure setpoint to prevent nitrogen injection from the CLAs based on ERG Maintenance Item DW-06-014. The revised setpoint is based on a coefficient of expansion of 1.0 instead of 1.25. (Refer to EOP Setpoint Study Sections 5.27 and 5.28.)</p> <p>ERG I-16c: Deleted since at SHNPP the T2 (270° F) temperature cannot be met until SG pressure is less than 230 PSIG. Saturation temperature for 230 PSIG is approximately 386° F. Therefore, Tcold under natural circulation could never be less than 386° F with SG pressure greater than or equal to 230 PSIG. A Tcold of 270° F corresponds to a SG pressure of approximately 26 PSIG.</p> <p>ERG R-16e: Deleted because EOP instruction column provides adequate information to perform required action.</p> <p>Added instructions to maintain pressure within a specified band (50 PSI). Specifying a control band is consistent with EOP Writers Guide and standard operations practices.</p>
25	17	<p>Step reworded to clarify its intent. Changed ERG wording from "Check" to "Monitor" since this is intended to be a continuous action during the SG depressurization (ACFR 94-00135).</p>
None	18-NOTE	<p>Deleted since its associated step is deleted.</p>
None	18	<p>Deleted since it is not applicable. SI has already been reset prior to actions that prevent loads from automatically sequencing on to the emergency buses.</p>

HNP Licensed Operator Written Exam question #93 Post Exam Comment

Comment for question 93 is there is no correct answer. The question asks “in accordance with OPS-NGGC-1000, who is responsible to review and sign the Batch Gaseous Effluent Permit to authorize the release”. OPS-NGGC-1000 does not delineate who is responsible to review and sign the Batch Gaseous Effluent Release Permit. OPS-NGGC-1000 Section 4.4.16 states the CRS approves all radioactive releases but there is no requirement that the CRS will sign the permit.

Procedure OP-120.07 Section 8.39.2 Step 27 for a Waste Gas release specifically places responsibility to “review and sign” the Batch Release Permit on the Superintendent-Shift Operations. Additionally, the Batch Release Permit computer printout requires a Shift Supervisor signature for approval. (The Superintendent- Shift Operations and Shift Supervisor are previous titles for the current Shift Manager position. Title changes are updated during scheduled revisions.)

Based on HNP procedures the reference to OPS-NGGC-1000 in the question stem is not correct for review and signature approval of Batch Gaseous Effluent Permits and therefore there is no correct answer.

References:

Exam question 93

OPS-NGGC-1000 Section 4.4.16 page 22

OP-120.07 Section 8.39.2.27 page 168

WGDT Release Permit Computer Printout

93. Given the following plant conditions:

- The plant is operating at 100% power
- Operators are aligning a Waste Gas release in accordance with OP-120.07, Waste Gas System
- The total concentration for the WGDT to be released is above the value for waiving the requirement to check the stability class
- The weather is degrading due to a temperature inversion
- ERFIS indicated Stability Class 'B' when the permit was prepared but now indicates Stability Class 'E'.

Which ONE of the following describes (1) the impact of the stability change on the planned release AND (2) in accordance with OPS-NGGC-1000, Fleet Conduct Of Operations, who is responsible to review and sign the Batch Gaseous Effluent Permit to authorize the release?

- A. (1) The release is on hold until a new permit with the current stability class is issued.
(2) The CRS
- B. (1) The release is on hold until it is predicted that the Stability Class will be a Stability Class 'C' in the next 4 to 6 hours.
(2) The CRS
- C. (1) The release is on hold until a new permit with the current stability class is issued.
(2) The Shift Manager
- D. (1) The release is on hold until it is predicted that the Stability Class will be a Stability Class 'C' in the next 4 to 6 hours.
(2) The Shift Manager

QUESTIONS REPORT
for 2012 NRC SRO REV FINAL

#93

1. *Plausibility and Answer Analysis*

Reason answer is correct: OP-120.07 gives Stability Class A, B, and C as one of the ERFIS required Stability classes to release to the environment. OPS-NNGC-1000 CRS responsibility #16 states that the CRS approves all liquid and gaseous release permits.

- A. *Incorrect. Plausible because any release requires an accurate permit but the stability class can change within those listed in the procedure, during the release. The second part is correct.*
- B. *Correct.*
- C. *Incorrect. Plausible because any release requires an accurate permit but the stability class can change within those listed in the procedure, during the release. The second part is plausible because per OP-120.07 the Shift Manager could approve the release (but this question asks who approves the release IAW OPS-NNGC-1000).*
- D. *Incorrect. The first part is correct. The second part is plausible because per OP-120.07 the Shift Manager could approve the release (but this question asks who approves the release IAW OPS-NNGC-1000).*

QUESTIONS REPORT

for 2012 NRC SRO REV FINAL

071 Waste Gas Disposal System (WGDS)

071A2.08 Ability to (a) predict the impacts of the following malfunctions or operations on the Waste Gas Disposal System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Meteorological changes
(CFR: 41.5 / 43.5 / 45.3 / 45.13)

Importance Rating: 2.5 2.8

Technical Reference: OP-120.07, Section 8.39.2 step 16, Page 165, Rev. 54, OPS-NGGC-1000, CRS Responsibilities #16, Page 22, Rev. 6

References to be provided: None

Learning Objective: Liquid Waste Processing Student Text, Obj 4

Question Origin: New

Comments: None

Tier/Group: T2G2

SRO Justification: Fuel handling facilities and procedures: Refuel floor SRO responsibilities

4.4 Control Room Supervisor (CRS) (continued)

9. The staffing rule requires the continuous presence of SRO in the Control Room (see 5 above) to ensure the following:
 - a. The oversight function of the supervisor is maintained.
 - b. The SRO is aware of plant conditions before, and resulting from, an abnormal event. This helps ensure that the experience, training, and knowledge of the SRO is available to aid in promptly mitigating the event.
 - c. The OAC can concentrate on performing the immediate actions necessary to mitigate the event rather than having to brief the SRO about the event if the SRO was absent from the control room when the event occurred.
10. Directly supervise Control Room watchstanders in the manipulation of Reactor and plant controls. The CRS will refrain from manipulating plant equipment. [SOER 07-1 Rec. #2]
11. Ensure a licensed operator (RO/SRO) is present at the controls at all times during plant operation.
12. Ensure the plant is rigorously monitored and operating activities are conducted in accordance with applicable procedures.
13. Monitoring plant operation in a manner that obtains the highest possible level of nuclear safety and ensures protection of the health and safety of other employees and the general public.
14. Ensuring all Control Room and shift activities are carried out in a highly professional manner conducive to plant safety and personnel safety throughout the plant.
15. Ensure comprehensive tours are performed of all watchstations in accordance with station expectations.
16. Approves all Radwaste liquid and gaseous release permits.
17. Monitoring operator activities and providing feedback and coaching ensuring that the operations standards are being met.
18. Monitoring watchstander logs, records and evaluate data obtained from installed instrumentation and communicate information to the appropriate personnel. This review is to detect abnormal trends, assess potential operating problems and confirm the accuracy of information. Initiate plant corrective action, as appropriate based on this review and report per the condition reporting process.

8.39.2 Procedural Steps (continued)

- (12) Using keypad, **ENTER** the High Alarm Permit Value (4EX837). _____
- (13) **DEPRESS** ENTER. New setpoint should be entered. _____
- (14) **DEPRESS** SEL to go to channel 10. _____
- (15) Using keypad, **ENTER** the Alert Alarm Permit Value (4EX837). _____
- (16) **DEPRESS** ENTER. New setpoint should be entered. _____
- (17) **RETURN** RM-11 Key to Normal. _____
- b. **SIGN** the Waste Gas Decay Tank Vent Log indicating that correct WRGM Permit values have been entered. (Log Item 16) _____
- c. **PERFORM** independent verification that the correct WRGM values have been entered from the Batch Gaseous Effluent Permit Vent Stack 5 Attachment into the RM-11. **LOG** on Attachment 3. (Log Item 17) _____
- 24. **VERIFY** the Batch Gaseous Effluent Permit passes the 10CFR50 compliance by ensuring there is not an "A", "S", "N", or "O" indication in the FLAG Section of the permit. _____
- 25. **RECORD** the Max Effluent Flow Rate from the Batch Gaseous Effluent Permit (Log Item 18). _____
- 26. **HAVE CRS** to review the release package and sign the Waste Gas Decay Tank Vent Log (Log Item 19). _____
- 27. **REQUEST** Superintendent - Shift Operations review and sign the Batch Gaseous Effluent Permit. _____
- 28. **CHECK** out the key to unlock the Gas Decay Tank Vent Valve 3WG-229 from the MCR. _____
- 29. **OPEN** the Gas Decay Tank Outlet Valve on Gas Decay Tank to be vented:
 - 3WG-19 - Tank A
 - 3WG-25 - Tank B
 - 3WG-31 - Tank C
 - 3WG-37 - Tank D
 - 3WG-215 - Tank E
 - 3WG-221 - Tank F
 - 3WG-45 - Tank G
 - 3WG-51 - Tank H
 - 3WG-57 - Tank I
 - 3WG-63 - Tank J

Gaseous Radioactive Waste Release Permit 120019.040.002.G
Pre-Release Supplementary Data

PART I: PRE-RELEASE DATA

RELEASE POINT (40): WGDT G - Batch Gas
DISCHARGE POINT (30): WASTE PROCESS BLDG STACK 5

Permit Issued: 19-jan-2012 13:25:58 Release Type: Batch

Rad Monitor: RM-1WV-3546-1
Rad Monitor Bckgrnd: 0.0000E+00 ~~~~~ 0.0000E+00 uCi/cc

Estim. Waste Flow: 1.5000E+01 CFM Initial Temp: ✓ 10 deg C
Estim. Waste Volume: 2.2837E+03 CF
Estim. Release Start: 19-jan-2012 20:00:00
Estim. Release End: 19-jan-2012 22:32:15 Initial Pressure : 5.8000E+01 ✓
Estim. Duration: 152.2463 MIN Final Pressure : 0.0000E+00 ✓

PART II: PRE-RELEASE CALCULATIONS

Sample Entry # : 20
Noble Gas File Name : CAS_SAM:120103.CNF ✓
Particulate File Name: N/A
Radioiodine File Name: N/A
Gas sample time: 19-jan-2012 09:40:00 Sampled by: BB

Allocated Total Body Dose Rate: 4.91E-04 mrem/yr % Limit = 0.0%
Allocated Skin Dose Rate: 1.17E-03 mrem/yr % Limit = 0.0%
Allocated Max Organ Dose Rate: 1.07E-04 mrem/yr % Limit = 0.0%

Max Monitor Setpoints: RM-1WV-3546-1
Noble Gas : 0.00E+00 ~~~~~ 1.33E-04 uCi/cc
Particulate : 0.00E+00 ~~~~~ 0.00E+00 ~~~~~
Radioiodine : 0.00E+00 ~~~~~ 0.00E+00 ~~~~~
Gas Monitor Response: 0.00E+00 ~~~~~ 1.65E-07 uCi/cc

Flag:
Flags: A-Release Curies > Local Limit N-Noble Gas Dose Rate > Limit
S-Release Curies > Site Limit O-Organ Dose Rate > Limit
D-Default Nuclide used for Release Point Setpoint Calculations.
E-Default Nuclide used for Discharge Point Setpoint Calculations.

	Analysis Date	Measured Concen.	Est. Curies
Noble Gases	19-jan-2012 09:48:23	9.42E-06 uCi/cc	6.09E-04
Particulates	19-jan-2012 09:48:23	0.00E+00 uCi/cc	0.00E+00
Radioiodines	19-jan-2012 09:48:23	0.00E+00 uCi/cc	0.00E+00

PRE-RELEASE SIGN-OFFS

PERFORMED BY: BARRY BAKER 1-19-12 1345
TECHNICIAN DATE TIME
VIEWED BY: Wanda Baker 1-19-12 1409
E&C SUPERVISOR OR DESIGNEE DATE TIME

REVIEWED BY: N/A
RC DESIGNEE

N/A
DATE

N/A
TIME

APPROVED BY: [Signature]
SHIFT SUPERVISOR

1/20/12
DATE

0243
TIME

COPY