

November 16, 2001

U.S. Nuclear Regulatory Commission  
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ULNRC-4561

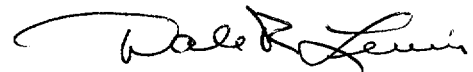
Gentlemen:

**CALLAWAY PLANT UNIT 1  
UNION ELECTRIC CO.  
EMERGENCY PREPAREDNESS  
2001 BIENNIAL EXERCISE SCENARIO**

Enclosed please find the scenario manual containing the description of the Callaway Plant 2001 Biennial Emergency Response Plan Exercise conducted October 3, 2001. This should be placed on file at the Public Records Room.

If you should have any questions concerning the content of the scenario manual, please call Mr. Luke Graessle, Superintendent, Protective Services at (573) 676-8129

Sincerely,



for Luke H. Graessle  
Superintendent,  
Protective Services

DRL/LHG/seh  
Enclosure

A045

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**AmerenUE  
Callaway Plant**

**2001 Biennial RERP Exercise**

**October 3, 2001**

**The material contained in this package should be kept  
CONFIDENTIAL.**

**Until October 4, 2001**



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\* Material not included in review copy for NRC and FEMA

## 2001 Biennial RERP Exercise On-Site Objectives

Obj. #	Description	Control Room	TSC	EOF	JPIC
1*	Evaluate plant conditions and perform accident detection and assessment referring to Operational and Emergency Procedures, including ODP-ZZ-0025, E-0.0, and ECA-0.0.	X			
2*	Recognize emergency conditions and declare emergency classifications in accordance with EIP-ZZ-00101.	X	X		
3*	Notify On-Site and Off-Site Emergency Response Personnel of emergency classifications within 15 minutes of declaration in accordance with EIP-ZZ-00200 and EIP-ZZ-00201.	X	X	X	
4*	Using the primary communication methods, e.g. Gaitronics, plant radios, telephones, SENTRY, and BURS, communicate between the Plant Emergency Response Facilities and other Off-Site Emergency Response Organizations, in accordance with EIP-ZZ-00201.	X	X	X	
5*	Control radiological exposures within the limits established in Plant Procedures HDP-ZZ-01450 and HTP-ZZ-06001	X	X	X	
6*	Make Protective Action Recommendations to Off-Site Authorities in accordance with EIP-ZZ-00212.	X		X	
7*	Demonstrate the ability to augment the On-Shift Organization within a goal of 30 minutes of an ALERT or higher emergency classification for normal working hours and to fully staff the emergency response facilities within 90 minutes in accordance with to EIP-ZZ-00200.	X	X	X	
8*	Staff the Emergency Response Organization with designated responders that are fully qualified for their respective positions.	X	X	X	X
9	Mobilize ERO personnel to activate and staff the JPIC to release information related to the radiological emergency to the news media, in accordance with EIP-ZZ-PR020.	X		X	X
10	Use Emergency Response Teams (Emergency Repair and Search and Rescue) to initiate corrective actions and provide support under various plant conditions in accordance with EIP-ZZ-00220.	X	X		
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13	Determine the magnitude and impact of a radiological release using the MAGNEM dose projection program, in accordance with EIP-ZZ-01211.	X		X	

## Summary of Anticipated PI Opportunities

The following is a summary of the anticipated PI Opportunities to be presented during the events of the scenario for the Biennial Exercise, October 3, 2001. 14 opportunities are designed in the events of the main scenario.

Opportunity	Recognition and Declaration	Initial Notification	Total Opportunities
Unusual Event (EAL 4R, Unidentified RCS leakage > 10 gpm)	1	1	2
ALERT (EAL2B, RCS leakage > 50 gpm)	1	1	2
Site Emergency (EAL 2C, DEI > 300 uci/gm, failure of 2 barriers, RCS system and clad)	1	1	2
General Emergency (EAL 2E, loss of all 3 barriers when Containment fails)	1	1	2
PAR Declaration with GE, evacuate 2 miles around and 5 miles downwind, Sectors E, F, and G	1	1	2
Extension of PARs to 5 around and 10 down	1	1	2
Expansion of effected Sectors due to wind shift, add Sector H	1	1	2
Total			14

**List of Controllers and Evaluators**  
Biennial Exercise, October 3, 2001

Drill Lead Controller Dale Lewis

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## Controller/Evaluator Guidance

### General

The Lead Controllers in the Simulator, TSC, EOF, and JPIC are responsible for maintaining communications with the other facilities and ensuring that scenario events are maintained relatively close to the timeline, yet allowing for the free play by the participants. There will be additional controllers in the TSC, EOF, and JPIC to assist the Lead Controller and also evaluate individual performance. Each facility will have a Facility Evaluator that will be evaluating the overall performance of the facility and our ability to control the drill.

Controllers will also be evaluators. Any conversations with the participants should only relate to drill data or information as it is "earned" by the participants.

**You WILL NOT be allowed to coach or train during the Exercise. Casual conversations between controllers and participants may be construed as coaching and result in unsatisfactory performance. All controllers should take action to stop any such conversations observed. An exception to this will be that any communication, Gaitronics, telephone, radio, etc. that goes outside a facility, should be proceeded and concluded with "This is a drill." Controller intervention in this situation will not be considered "Coaching".**

Performance observed during this Exercise will be used in the Performance Indicator (PI) database. Particular attention should be paid to the timing and accuracy of the events around the "Risk Significant" areas.

### Responsibilities:

As a Controller, your responsibilities will be to:

- control the events of the scenario.

Note: Our ability to correctly control the events, directly affect the opportunities for the players to succeed or fail.

- **Not allow operation of equipment that may effect plant operations, especially radio transmission in those areas in the plant that are sensitive to such.**
- Not allow any unsafe action or allow any participant to put himself or herself at risk.
- Observe the participant's actions and accurately document.
- Complete evaluation material if applicable.
- Give the participants the chance to critique themselves and bring constructive comments to both the functional area critique and the facility critique,
- Identify, for discussion, important issues not addressed by the participants in the facility critique.

At the conclusion of the Exercise, the assistance of the Controllers in communicating needed corrective actions from items identified in the critique is appreciated.

### Expectations of you as a Controller are to:

- Know the sequence of events for the scenario and how your specific area fits into the main scenario.
- Be familiar with the expected responses of the positions that you are controlling and anticipate the actions of the participants.
- Understand that the simulator will drive the operational plant actions, but in the event of a simulator failure, know what your actions would be to continue the Exercise.

- Contribute to the functional area and facility critiques through your verbal comments or written evaluations and checklists.
- Forward all suggestions that may improve the abilities of the Emergency Response Organization to the EP Department.
- Contribute to the combined critique following the Exercise.

### **Controller Instructions**

Facility Lead Controllers should pre-position themselves in the respective facilities by at least:  
 Simulator 0600.  
 TSC and EOF 0700 .  
 JPIC 0800.

Other controllers for the facilities should be within 30 minutes of the Lead Controller. Controllers for the DOH Field Teams should meet their teams at the DOH offices in Jefferson City by 0800.

All Facility Lead Controllers should contact the Simulator Controller (68809) or Simulator Lead Controller to verify controller communications. On-site Controllers will use the training radios, specifically channel 5, HP T, for controller communications and coordination of activities. The governing clock will be the Simulator Plant Computer Clock and the digital displays in the Facilities should be synchronized to it. Facility clocks and Controller's watches should be synchronized to the Simulator Plant Computer time display.

Controllers and Evaluators for the On-site ERFs should card key in initially to assist Security in the accountability processes and then need not use the card key reader until the conclusion of the drill. Observers, Controllers and Evaluators are exempt from all drill related access control, contamination control, and accountability procedures in effect when entering or exiting an Emergency Response Facility if it restricts the progress of the team or event that you are following. Controllers should observe the same restrictions on eating and drinking as the players. If you will be required to enter the RCA as part of the scenario, you should go to HPAC prior to the start of the drill, pick up your ED, and log in so that you don't slow the responders waiting on you if your scenario requires RCA entry.

Emergency Teams should use plant channel 1 or 2.

**Insure that all Plant Radios are turned off before entering plant areas identified as "NonTransmit" areas and that no participant's "key" their radios in these areas.**

All messages controlling the progress of the Exercise scenario are noted with an identifying number.

Contingency messages, those needed to maintain the Exercise scenario sequence of events, are identified by a letter designation, "C", preceding the message number.

**If the use of a contingency message is necessary to maintain progress of the Exercise scenario, the situation should be discussed with the Exercise Lead Controller prior to the issuance of the message.**

Actions or messages that the Controller needs to interject into events to stop a known action or modify response or action are identified by a letter designation, "CI", preceding the message number.

Messages to be issued to initiate public information, media monitoring functions in the State EOC or JPIC, or other off-site agencies will be further identified by a letter(s) designator following the message number. These designators are as follows:

"JPIC" Public Information function in the JPIC.

"SRC" State rumor Control in the JPIC.

"MM" Media Monitoring function in the JPIC.

"C" for Callaway County/Fulton.

"M" for Montgomery County.

"O" for Osage County.

"G" for Gasconade County.

All messages should be issued at their designated time unless otherwise instructed by the Lead Controller. Time that is enclosed in parenthesis (Time) is an approximate time that resulting actions should be completed by and the message passed or event completed.

Time-related plant parameters and radiological data should be issued when the participant makes specific requests to the appropriate Controller and then only when players read an instrument pertaining to parameters needed. The participant should take actions that would justify the information provided.

Controllers should contact the Lead Controller whenever unplanned scenario variations that may affect the main scenario occur during the Exercise. In addition, other Controllers whose assigned areas may be affected should also be notified of the scenario variation. If operation of plant equipment, i.e., starting or stopping equipment is simulated, the simulator operators should be notified (68809) so that those actions may be reflected on the simulator.

All emergency notifications to the State and Counties should be completed in accordance with EIP-ZZ-00201 using whatever equipment is available. After each facility or group of communicators completes a notification to the local authorities, additional notifications may be simulated at the Controller's discretion. Contact with the NRC Headquarters may be restricted at the request of the NRC Headquarters to the initial notification and final notification that the drill has terminated. Notification of NRC Headquarters, INPO and ANI, should be simulated by calling the numbers on the Drill Phone Number list provided in the facilities.

The primary function of the Controller is to control the situations to which the participants have to respond. Each Controller should take notes regarding the progress of the Exercise and the responses of the Exercise "players". The "Controller Observation Sheets" at the end of this section, should be used for taking these notes, recording comments on the participant's responses and as a reference for completion of the evaluation materials.

Prior to the end of the Exercise, each Facility Lead Controller should ensure a Record of Drill Attendance Form or its equivalent (CA #-39), is circulated and all participants fill it out. These will be available in each facility. Completed attendance documentation forms should be given to the facility Lead Controller or forwarded to the EP Department.

Evaluation and Observation sheets should be turned in to the facility Lead Controller at the end of the facility critique.

Areas needing improvement, weaknesses, or concerns that are observed during the Exercise should be identified during the facility critique and should be documented during the critique. Any individual may



generate corrective action documentation (Work Requests and CARS). The EP Department will evaluate corrective actions identified during the critiques and insure that CARS or other corrective action documents are generated.

Controller discussion of the proper use of scenario data or expected response of the players with Exercise "players" should be a part of the critiques in the functional areas.

**List of Participants**  
Biennial Exercise, October 3, 2001

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**Players Guidelines and Extent of Play (On-site)**  
**Biennial Evaluated RERP Exercise**  
**October 3, 2001**

**I. GENERAL**

The 2001 Biennial Evaluated RERP Exercise will be conducted on October 3, 2001. Events will be driven from the Simulator, with participation from the State of Missouri and Plume EPZ Counties.

The Simulator Gaitronics will be merged with the Plant Gaitronics. It is expected that all personnel on-site will respond to and support any site wide announcements related to the drill events, as directed in the plant announcement. Examples of these announcements would be those associated with drill related severe weather conditions, emergency declarations, accountability, and/or Security events. Participants should follow the instructions in the announcement until the announcement is made that the Exercise is terminated.

Responders filling emergency positions are expected to be fully qualified for their respective positions. Appropriate badges will identify Observers and Controllers/Evaluators.

The players should take appropriate actions, and if information is needed, the Controller may supply information and data if the actions were correct to "earn" the information. Except for the release of "earned" drill related information, the Controllers and Observers should not engage players in discussions, either casual or relating to the drill progression, during the drill.

Critiques with the participants will be held in each Emergency Response Facility immediately following the Exercise. Suggestions for improvements should be noted by both Controllers and players and be recorded in the facility critiques or on the written critique forms.

**II. PARTICIPATING ORGANIZATIONS**

The following organizations, as a minimum, will be participating in the 2001 Biennial Exercise. Communication cells may be used for other off-site agencies not listed below:

A. AmerenUE Callaway Emergency Response Organizations (ERO):

- On-Shift Emergency Organization
- On-Site Emergency Organization
- EOF Emergency Organization
- JPIC Emergency Organization

B. State of Missouri State Emergency Management Agency

C. State of Missouri Joint Public Information Center

D. State of Missouri Department of Health

E. Callaway County/Fulton

F. Montgomery County

G. Gasconade County

H. Osage County

### III. PRE-STAGING/PRE-POSITIONING

- A. The On-Shift Crew will be pre-staged since they may have to be canvassed and scheduled for overtime to meet the staffing needs.

The participating Control Room Operations Crew, Control Room Communicators (typically 2 I&C Technicians), Health Physics Operations Tech and the Health Physics Count Room Technician, will be pre-staged in the Training Center Lobby. They should respond to drill alarms, announcements, or requests as if they were responding to the Control Room in the plant. Those responders that normally are not Control Room watchstanders should continue to support the Control Room Simulator activities until released to the Operations Support Area by the Shift Supervisor.

- B. The On-Site, EOF, and JPIC Emergency Response Organizations will be contacted in accordance with the augmentation process, as described in EIP-ZZ-00200. Utility supplied JPIC participants may be allowed to pre-stage in the SEMA office area or cafeteria.

### IV. EXTENT OF PLAY

- A. All Exercise communications (plant announcements, telephone, radio, etc.) should be preceded and concluded by the phrase **"THIS IS A DRILL"**. Radio transmission restrictions for those radio sensitive areas in the Plant will be observed. Any communications with off-site organizations or individuals that are not aware of the drill should be given a brief explanation that these events are not real and that any actions on their part are not required. Any additional requests for information by the non-participants should be directed to Corporate Communications in St. Louis, (314) 554-2521.
- B. The Simulator will be used for all drill activities instead of the actual Control Room. The Simulator Gaitronics will be merged with the plant. Any Gaitronics announcement will be heard in all Plant locations. Any drill related phone calls that would normally be made to the Control Room should be directed to the Simulator. Drill Phone Numbers will be available in each ERF.
- C. No Plant system or equipment, which may affect Plant operation or safety, should be manipulated or operated in any manner. If participants have a question about using real conditions, such as real weather or forecasts, the Controllers will stipulate if the real conditions should be used or if drill data will be supplied when requested/earned.
- D. All participant activities should be carried out to the fullest extent possible, unless the Controller preempts specific actions. Controllers may terminate any action by participants if the Controller deems those actions unnecessary, inadvisable, or unsafe. No participant should perform any unsafe act in order to demonstrate an Exercise objective. If there is a question regarding safety, the Controller should intervene immediately.
- E. **Should a real emergency arise during the drill, the real emergency will be dealt with and the drill events will either be suspended or terminated depending on the nature of the emergency.**
- F. Any sample requiring the use of the Post Accident Sampling System (PASS) will be simulated and the anticipated data provided by the Controller for that area.
- G. Where possible, plant "mock-ups" will be used in lieu of actual plant equipment. If entry into plant radiological areas is required, normal ALARA precautions must be observed. No entry should be permitted that will result in actual personnel contamination or unnecessary exposure.

- H. Potassium iodide (KI) will not be issued. Actual administration of KI will be simulated should conditions warrant its administration. However, all preliminary steps and documentation prior to the actual issue and consumption of the KI tablets should be completed.
- I. Accountability, either through assembly or evacuation, for the non-participating plant staff will be simulated. All actions prior to an announcement declaring assembly or evacuation should be completed, but the announcement intercepted and modified by a TSC Controller. Accountability within the Emergency Response Facilities will be maintained.
- J. If the event the scenario would require that 10 CFR 50.54 x or y be implemented, all actions up to the notification of the NRC should be completed. Once these implementing actions have been completed and the notification to the NRC is ready to be made, the notification should be stopped by the Controller and implementation simulated. No actual action requiring implementation will be permitted.
- K. Drill Participants will be expected to observe all drill related radiological conditions and controls. Drill Controllers, Evaluators and non-participating plant staff may bypass the drill radiological restrictions, unless required by actual plant conditions. Establishment of boundaries and postings relating to drill conditions will not be required during the drill as this would normally be done during the Re-entry preparations.
- L. Food, supplies, materials, etc. delivered to the Emergency Response Facilities (ERFs) should be externally surveyed (outermost exposed surface) by Health Physics prior to permitting entry and distribution in the ERFs (materials from an off-site vendor would not be contaminated).

## **V. EQUIPMENT and MATERIALS**

### **A. Installed Plant Equipment.**

Use of the installed emergency response equipment in all facilities is expected. Events will be driven by the simulator and all information displayed in the ERFs should be treated as actual Plant information. Information obtained from non plant equipment, i.e., the Internet and real time weather forecasts, etc., should not be used. The Controller for that area must approve any use of information obtained from the actual Internet. The following installed equipment will be available and should be demonstrated:

1. Plant Computer Systems, including status boards and displays.
2. The Dose Projection Program, MAGNEM.
3. The primary Notification System, SENTRY.
4. The Backup Radio System, BURS, for notifications, if necessary.
5. Emergency ventilation/circulation lineups will be initially established and maintained for the duration of the drill.
6. ERDS will **not** be activated but should be simulated up to the final connection to the NRC.

### **B. Portable Equipment**

Portable equipment may be obtained from Emergency Equipment Lockers or from in-plant locations. When using portable equipment to obtain scenario related readings or data, the participant should take the required actions to obtain the reading/data and inform the Controller of all actions. Upon completion of the action necessary to "earn" the data or reading values, the specific drill values, readings, etc. will be supplied by Controllers.

1. Field Communications - The Plant Radio System will be used for drill communications and for normal plant communications.

2. Dosimetry - TLDs and Electronic Personal Monitoring Devices should be issued and used as applicable to the drill situation.
3. Protective Clothing - Protective Clothing (PCs) and Respiratory Protection should be used if required by the events of the scenario. By the direction of the drill Health Physics personnel, disposable protective clothing may be used in place of the typical cloth yellow PCs. Respiratory Protection will be used as directed by the drill Health Physics personnel.

Upon exit from the RCA or any drill related contaminated area where PCs would be required to transit from the work area to the ERF, PCs may be either the disposable type or may be simulated. Actual PCs used for routine work in the plant will not be released from normal Health Physics Controls outside the RCA.

4. Radiological surveying and analysis equipment:
  - Air Samples: If Silver Zeolite (AgZ) Cartridges marked specifically for drill use are available in the kits, they should be used. If "Drill" AgZ cartridges are not available, a new AgZ or charcoal cartridge may be used for Iodine samples and should be reused when collecting other drill related air samples.
  - All detectors or measuring devices (survey instruments and counting devices) should have the typical checks completed prior to use.

C. Repair parts and replacement equipment

Repair parts and materials required by the scenario events may be identified and availability verified in lieu of being removed from the stores system. Time estimates to actually procure the materials should be identified and the events delayed accordingly.

## **VI. PLAYERS AND FACILITY CRITIQUES**

At the conclusion of the drill, time will be allowed to assemble drill-related materials and to self-critique and evaluate performance within the respective functional groups. Drill materials and documentation should be separated, assembled and given to the Lead Controller for that facility if not needed for functional area critiques. Emergency Packets and any forms not used should be organized and left on the work areas. The facility critiques will begin after the functional groups have had a few minutes to self-critique.

- A. The participants in the Key Coordinator positions in each functional area should lead the group self critiques and then summarize the specific comments in the facility critique. If not covered in the summary by the Key Coordinator, each participant will have the opportunity to voice his or her comments and concerns at this time and initiate appropriate corrective action documents. Individual participants will be encouraged to send any additional comments or specific problem areas not addressed in the critique to the EP Department, attn. Superintendent, Protective Services.
- B. The Facility Lead Controller in each facility will call the facility critique to order, establish any necessary guidelines, and then turn the critique over to the Lead Participant in each facility. Significant problems or deficiencies should have corrective action requests written by the individuals encountering the problems. The EP Department and the Callaway Plant Managers will evaluate notes of the critiques and comments for additional problems or improvements. Corrective action documents, CARS, or work requests will be written for those items not previously captured.
- C. Controllers for the specific areas should participate in the group critiques and contribute to the facility critique after the functional area Key Coordinator and participants. The Facility Evaluator will be given the opportunity to end the critique with comments on the overall performance of the

team, their ability to meet the primary objectives and their ability to protect the health and safety of the plant staff and public.



## Initial Conditions

The Plant is at 100% power and has been for the previous 136 days. There was a small downpower required in early August, but nothing since then. There was a Plant Containment Mini-Purge in progress in preparation for entry later this morning, but it was secured when alert (yellow) alarms were received on GT RE 22 and 33, Containment Purge Monitors. When the Containment Purge was secured GT HZ 0011 failed to give full closed indication. The valve was stroked a second time and it did not give any indication of a change in position. Tech Spec LCO 3.6.3 was entered. Dampers GT HZ-0009 and -0012 were closed, de-energized, and tagged closed in accordance with the 4 hr requirement. The plant is presently in a 31 day surveillance requirement for GT HZ-0011.

In response to increasing activity in Containment, an RFR was initiated by Engineering on Owls to adjust the alarm set points for the particulate and Iodine channels on GT RE 31 and 32. The RFR for the setpoints for GT RE 31 and 32 needs to be completed and the monitors adjusted to clear the alarms on days.

Routine leak rate calculations over the last week have identified the presence of a small leak that has not been located. The maximum leak rate previously monitored has been 0.27 gpm. The BB-09 completed late on owl shift (0430) indicated 0.81 gpm. A backup was requested to confirm the increase and it was started again at 0515 after the alarms were received on Containment Purge Monitors.

The entry scheduled for later this morning will be to attempt to locate and isolate existing unidentified leakage. The brief is scheduled for 0900 in the Field Office. Sampling to support the entry has been lined up and the release permit originally was scheduled through 1500 today.

No significant equipment is out of service.

Ameren System Status is Green

## Narrative Summary

### Biennial Exercise, October 3, 2001

The plant is operating at 100 % power. It has been on line continuously for the previous 136 days. No significant equipment is out of service. The RCS leakage surveillance (OSP-BB-0009) completed yesterday indicated that leakage has increased above what it has been, but not enough to cause any alarm. Extensive efforts were completed yesterday to attempt to identify the source of the leakage, but without success. A Containment Purge was initiated on Owls in preparation for a Containment Entry on Days. HP will have the CPH area set up (simulated) to support the entry. An HP tech, an engineer and 2 EOs will be making the entry. The job brief is scheduled for 0900 at the Field Office.

The weather is typical for early October. The temperatures may reach into the lower 80's for the highs, the wind is from the south-southwest at 5 to 10 mph with a weak high pressure cell approaching from the northwest. There is a slight chance of some light showers as the front moves through but, what few clouds that are present should blow out by mid day and turn into a beautiful Fall day. Some locally heavy rains were received earlier in the week, but there is no flooding or high water and no major weather changes are anticipated until the weekend.

GT RE 31 and 32, Containment Atmosphere Monitors, have been in alarm and an RFR to adjust the alarm setpoints has been initiated. The first leak rate that the crew completed on owl shift indicated 0.81 gpm (almost 3 times more than yesterday's) unidentified leakage. About 0500 Yellow (alert) alarms were received on the Containment Purge Monitors. A back up leak rate to confirm the original sample was started at 0515 after alarms were received. The Containment Purge was shutdown to prevent an isolation signal. Damper GT HZ-0011 failed to give indication of completely closing. It is indicating a dual position. Tech Spec 3.6.3 was entered. Dampers GT HZ-009 and 12 were verified shut and de-energized. Sampling is lined up to Containment for HP to sample prior to the entry. The backup leak rate initiated by the crew is a 2 hr. leak rate calculation.

At 0715 the crew will complete the data collection for the leak rate calculation and review the final calculation. At 0720 the indications are present in the Control Room Simulator that the unidentified leakage has exceeded 10 gpm (Mini-scenario #1) and that an **Unusual Event** should be declared (**EAL 4R, Unidentified Leakage > 10 gpm**). The declaration and initial notification should be completed by approximately 0735.

A repair team may be requested from I&C or Work Control to attempt to fix the damper GT HZ-11, but all attempts to repair it will prove to be unsuccessful. (Mini-scenario #9)

At 0745 the Control Room Simulator will receive an annunciator (70B) indicating that "A" RCP is experiencing high vibration. This will be followed shortly by alarms on the Loose Parts Monitor (79B) for the RCP and then shortly thereafter by indications for the lower core barrel. RCS activity will begin to increase rapidly. The Process Rad Monitor Annunciator (61B) will come in and the RM-11 will indicate that SJ RE-01, CVCS Letdown Monitor, has exceeded the alarm setpoint. The HHHI alarm (61A) will be received shortly afterwards. The "C" RCP will trip which causes the plant to trip, initiating an RCS leak. Safety Injection (SI) will eventually be required due to increased leakage, but it will take a few minutes to determine the leak rate due to the plant trip and cooldown. Area Rad Monitors in Containment will begin to increase. Annunciator 62B will come in due to increasing radiation levels in the Reactor Building. About 0750 to 0755, an **ALERT** should be declared (**EAL 2 B, Loss of RCS barrier**). Normal RCS sampling will isolate with the SI. If a normal sampling line is

established, any attempts to collect a normal RCS sample at the SJ Sample Sink will cause the Tech's ED to alarm and SD RE-24 to increase rapidly. The tech should request that PASS be lined up.

**Controller's Note: PASS samples will be simulated and not actually collected.**

The On shift Chemistry Tech should request the Control Room to line up for a PASS Sample.

Upon the SI signal being received, the sequencer will begin to start selected loads. "A" SI Pump will begin to start and then trip (Mini-scenario #2). The Secondary EO will be dispatched to the breaker, NB0103, to investigate. He will observe that all three phases indicate an overcurrent condition. The Primary EO may be dispatched to the SI pump room to check out the pump. If he is dispatched, his report will be that there may be a problem with the coupling, key may have sheared. Additionally, he will report that he cannot get the watertight door to the room to close (Door # 11131). The gears for the locking/closure mechanism failed and he(they) will not be able to close the water tight door. This will require repairs (Mini-scenario # 3). If the EO is not sent then the initial repair team will break the door.

About 0810 as the Main Turbine is still coasting down from the plant trip, the Lift Oil Pumps for the Main Turbine will trip. This may not pose a threat to the nuclear safety side, but it is a definite threat to the commercial aspect of the plant operations. Without Lube Oil, the bearing temperatures for the Main Turbine will begin to increase and may be destroyed. An investigative team should be dispatched from the TSC to investigate the reason for the loss of Lift Oil. Investigation will determine that fuses have blown and that the pump will still function properly once the fuses are replaced (Mini-scenario # 4).

At 0835, SD RE-38, Fuel Building 2047' level, goes into Alarm (Mini-scenario # 5). HP should investigate and attempts to reset the alarm will be unsuccessful. Local surveys will confirm that there is no increase in radiation levels in the immediate area. The monitor should be removed from service.

Once a sampling line up for PASS is established, the Chemistry Controller will supply the PASS sample results to the Tech as his actions are simulated and the results are earned. The RCS sample results after 0840-0845 will indicate that DEI has exceeded the limit of 300 uci/gm (EAL indicator for cladding loss). The Chemistry Tech should report the results to his supervisor (Chemistry Coordinator) and a **Site Emergency** should be declared (**EAL 2C, Loss of RCS Barrier and cladding**). Assembly and accountability will be simulated. The Controllers in the TSC should intercept the normal announcement and replace it with an announcement for simulated assembly. This will be as a Controller Inject message.

The OS Coordinator will receive a call from a clerk shortly after she reported to the CMB for Assembly, indicating that the Training Center had no water. Shortly after that, Security (MAF) will inform the TSC that there is water running out of the parking lot, just across from the entrance to the Training Center Parking Lot (Mini-scenario # 6). This will be confirmed by TSC controllers hanging signs on the drinking fountains and in the restrooms stating that there is only minimal water pressure. A drink from the water fountain is not possible and that the flush capability for the restrooms is lost. Once the valve is located and shut, isolating the Training Center from the potable water system, the signs will be removed and water available to the TSC and other buildings on site.

Between 0830 and 0900, the front will pass through the immediate area around the plant and wind will shift to from west-northwest at about 5 to 10 mph. There are no PARs in place so this is non event. It just set up the final effected sectors.

About 0915, a report will come into the TSC, probably through the Security Coordinator, that there is a problem at the main vehicle gate (Mini-scenario # 7). They were attempting to raise the Vehicle Barrier

and it will not rise. This is not a major problem, but the main access is blocked, vehicular traffic cannot enter and exit the PA.

About 0940, there will be indication that Breaker 52-3 in the switchyard has opened (mini-scenario #8). This will cause a loss of NB01. The Emergency Diesel will pick up the bus, but there will be a momentary loss of the RM-11 and associated process monitors. The RM-11 and process monitors can be returned to service within minutes of the original loss. The outside EO should be dispatched to investigate. He will report back that he has not been able to gain entry to the switch house due to the presence of a family of skunks. The skunks will have to be removed prior to anyone going in to determine the cause of the trip. Shortly (less than 90 seconds later) after the loss of Bkr. 52-3, Annunciator 42E will come in indicating that "B" CCP has tripped (Mini-scenario # 11). This causes a procedural challenge and forces a decision on the method of cool down to be used.

At 1010, fire protection panel, KC 008, window 108/101A, AB –General South elevation 2047' 6", activates red and alarms. A small explosion in room 1507, Fire Location A-20B, was the cause of this alarm. The explosion and momentary fire is a result of a leak on the Hydrogen analyzer resulting in the valve head from the calibration gas cylinder being ejected and ricocheting through the exhaust pipe for Containment above the CPH (Mini-scenario # 10). This will initiate the release to the environment through the Auxiliary Building and the Unit Vent. The release will be monitored by GT RE 21B. (Note: NB01 should have been re-energized shortly after the original loss of 52-3. The RM-11 should have been returned to service and all the monitors placed back in service.)

**A General Emergency should be declared on EAL 2E, Loss of all three barriers.** Initial PARs of Evacuation 2 miles around the plant and for 5 miles in the downwind sectors of E, F, and G. The OS Area should be actively getting teams staged to go in and attack the failed ductwork. Consideration should be discussed for administration of KI and extension of dose limits. The damage to the ductwork will force repairs to be made because the inventory in containment will continue to be released until either the plant is totally cooled down and no driving force exits (requires several hours) or the hole plugged.

If the default duration for the release (5 hrs.) is used, **projected doses** should be high enough to **recommend an increased evacuation area of 5 miles around the plant and 10 miles** in the downwind sectors, E, F, and G by 1045 to 1100. If these conditions are not met, containment radiation levels should exceed 300 R/hr about 1100 to 1115. There will be enough inventory in Containment to cause the **PARs to be extended to evacuate 5 miles around and for 10 miles in the downwind sectors, E, F, and G.** Around 1130-1145, a slight wind shift will occur that will require an **additional sector, Sector H, be added** to the effected sectors.

Depending upon the progress the repair team has made, the repairs may be completed as early as shortly after 1230, but should definitely be completed by 1315. The individual facilities will need to shut down as their events wrap up. It is understood that the Off-site Agencies and JPIC typically wind up a little after the plant. Each location off-site will make their individual announcements for drill termination. For the ERF on site, an announcement over the plant Gaitronics system will terminate all remaining On-site drill actions.

Sequence of Events  
Biennial Exercise October 3, 2001

Scenario Time	Message or Event No.	Initiated by or from	Issued to	Message/Event
<b>0640 – 0655</b>	<b>0640 Brief</b>			<b>Drill players 0640 meeting in simulated Field Office. Initial conditions reviewed</b>
0700	Mssg.# 1		All	Crew relieves the watch. Announcement Commencing Evaluated Biennial Exercise.
0715				Crew has the watch, crew briefs are complete.
<u>0720</u>	Mini-Scn # 1	Control Room Simulator	RO/CRS	BB09 confirms unidentified RCS Leak > 10gpm. Conditions met for <b>Unusual Event (EAL 4R)</b>
<u>0745</u>	Sim Operator		OBS	"A" RCP Vibration alarm (Ann. 70B), approx. 15 mils, followed shortly by Loose Part Monitor alarms (Ann. 79F) on "A" RCP followed by lower core alarms and LPM indication on "C" RCP.
0746				Process Rad Monitor Annunicator (61B) RM-11 in alarm, SJ RE-01 increasing (61A, HiHi).
0748				"C" RCP trips (locked impeller), Reactor trip due to P-8, 4 pumps required if > 48% Pwr.
		<i>Sim Operator action</i>	<i>OBS</i>	<i>RCS leak increases to &gt;50 gpm with the RCP trip. Detection may be masked by cool down.</i>
(0753)				Man. SI <b>ALERT declared (EAL 2B)</b> RCS leakage > 50 gpm. Hi Area Radiation alarms (in Reactor Building)
	Mini-Scn # 2 <b>Mssg # 2,2a</b> Mini-Scn # 3 <b>Mssg #3,</b>			"A" SI pump fails on start signal, over current condition, EO dispatched to investigate. Water tight door # 11131 damage/failure
0810	Mini-Scn # 4 <b>Mssg # 9</b>	Sim. operator simulating EO	OBS	Trip of Lift Oil pumps for Main Turbine
0835	Mini-Scn # 5	Sim. operator	OBS	SD-RE 38 Fuel Building ARM alarm. Reset fails to silence.
			OBS	Wind shift occurs, now from 292 degrees
(0845)				Simulated PASS sample, DEI > 300 uci/gm
(0850)				Chemistry reports DEI exceeds 300 uci/gm conditions present for <b>Site Emergency (EAL 2C) Declared.</b>
	<b>Mssg # CI 4</b>	SC Lead Controller	EC	<b>Site wide announcement modified to simulate assembly.</b>
(0900)	Mini-Scn # 6 <b>Mssg # 6</b> <b>Mssg # 7</b>	Controller Comm Cell	ENS Comm. TSC/OSC	Pot Water leak in parking lot and no water in Training Center and OMF with low water pressure in TSC.
0915	Mini-Scn # 7 Mssg # 8	Sec.Controller	SSS/Sec Coord.	Failure of VBA arm at MAF, down position.

Scenario Time	Message or Event No.	Initiated by or from	Issued to	Message/Event
(0920)	Mssg # CI 5	Sec. Controller	SSS/SC	Accountability complete, all personnel accounted for. 25 min. after Accountability
0940	Mini-Scn # 8			Loss of NB01, BKR 52-3 fails open due to heavy grease. EO refuses to enter switchhouse due to skunks and smell, possibly rabid.
(0942)	Mini-Scn #11			"B" CCP Trips (Ann. 42E) upon restart as "A" DG starts and picking up loads on NB01.
<u>1010</u>	Mssg # CI 10 Mini-Scn #10	Simulator Controller	CRS	Alarm on KC008. Explosion outside CPH resulting in Failure of Shutdown Purge Dampers and duct upstream of outer dampers. Release initiates.
(1015)	Mssg # CI4A	OBS		<b>General Emergency (EAL 2E)</b> declared. PARs of Evacuate 2 miles around and 5 miles downwind, sectors E, F, and G.
(1045 to 1100)				PARS extended to 5 miles around and 10 miles downwind based on projected doses or Containment Rad levels > 300 R/hr.
(1130 to 1145)				A wind shift occurs that adds another sector (H) to the downwind sectors of E, F, and G. Now from 313 degrees. Light rain start south of Missouri River
(1230 to 1315)				Repairs complete, Release is stopped.
1330				Drill Terminated, Commence Facility Critiques, Offsite activities may continue as necessary
1430				Facility Lead Controllers commence Critique review and consolidation.

All times are approximate times except for underlined times.

Underlined times are definite (hard Lined) times for associated events.

Times in parenthesis (NNNN) are anticipated operator/player action driven and are approximate

SCENARIO MESSAGE

Initiated by: Lead Controller Location: Simulator Message No. 1  
Delivered to: all Location: Entire Site Scenario Time: 0700  
Phone No. Gaitronics

**THIS IS A DRILL**

**Attention all Personnel!! Attention all Personnel!!**

Commencing the Team 3 RERP Drill. All personnel should listen to and obey all drill related plant alarms and announcements as appropriate for your position.

**Attention all Personnel!! Attention all Personnel!!**

Commencing the Team 3 RERP Drill. All personnel should listen to and obey all drill related plant alarms and announcements as appropriate for your position.

**THIS IS A DRILL**

## SCENARIO MESSAGE

Initiated by:	<u>EO Repair Team</u>	Location:	<u>NB Switchgear Room</u>	Message No.	<u>2</u>
Delivered to:	<u>CRS/SS E Team Coord.</u>	Location:	<u>Control Room Simulator OSA</u>	Scenario Time:	<u>(0800) (0830)</u>
		Phone No.	<u>Gaitronics/Radio</u>		

Refer to Mini-scenario # 2, Failure of "A" SI pump to start.  
The EO sent to the check breakers (NB 0103) or the repair team may call in this message when they respond.

### THIS IS A DRILL

This is the Secondary EO, I'm here at the breakers for "A" SI pump and it looks like all the 150/151 flags for all three phases have dropped. It appears that it tripped on an overcurrent condition on all three phases. I can't see any other indication of any trouble here.

### THIS IS A DRILL



## SCENARIO MESSAGE

Initiated by:	<u>Primary EO Repair Team</u>	Location:	<u>"A" SI Pump</u>	Message No.	<u>2a</u>
Delivered to:	<u>CRS/SS E Team Coord</u>	Location:	<u>Control Room Simulator OSA</u>	Scenario Time:	<u>(0800) (0830)</u>
		Phone No.	<u>Gaitronics/ Radio</u>		

Refer to Mini-scenario # 2, Failure of "A" SI pump to start.

The EO sent to the check the "A" SI pump or the repair team may call in this message when they respond.

**Controller's Note: Physical contact with the actual pump should not be allowed. The pump will be operable and may start at any time. The extent of actual actions would be to open the guard around the coupling.**

### THIS IS A DRILL

This is the Primary. I've looked at the "A" SI pump and I can't say for sure but it appears that the key in the coupling between the motor and pump may have sheared. It's pretty tough to tell for sure because of the guard around the coupling. I think that you need to get maintenance down here to be sure. I'm afraid to try to roll either the pump or motor by hand. We probably ought to go ahead and get it tagged out.

NOTE: If the repair team is making the report, they may report that the key is sheared, the coupling may have damage to the point that it will not be re-useable if key replaced.

If coupling is removed as part of initial response, they may report that the motor can be turned by hand (not binding), but the pump can not be rolled with the people and equipment they have with them.

Stores should start looking for replacement coupling and key.

### THIS IS A DRILL

## SCENARIO MESSAGE

Initiated by:	<u>Primary EO Repair Team</u>	Location:	<u>"A" SI Pump Room</u>	Message No.	<u>3</u>
Delivered to:	<u>CRS/SS E Team Coord</u>	Location:	<u>Control Room Simulator OSA</u>	Scenario Time:	<u>(0805) (0845)</u>
		Phone No.	<u>Gaitronics/Radio</u>		

Controllers should refer to Mini-scenario 3 for additional information. If the Primary EO is dispatched to the room before the Repair Team, then the EO will break the door. If the EO has not been dispatched, then the Repair Team will damage the door upon their entry.

### **THIS IS A DRILL**

This is the Primary EO (or Repair Team as it applies). Apparently as I (we) entered the SI Pump Room here, I (we) must have opened the door too quickly or something. Anyway, I (we) can't get the door to latch when we attempt to shut it. The door will swing, but the handwheel is hung up and the locking levers won't engage the doorframe.

### **THIS IS A DRILL**

## SCENARIO MESSAGE

Initiated by: TSC Controller Location: TSC Message No. CI 4  
Delivered to: EC Location: TSC Scenario Time: (0900)  
Phone No. NA

The standard plant announcement associated with the Site Emergency is not to be made. Assembly and Accountability will be simulated. The attached plant emergency announcement may be modified and used at the EC discretion or the text below may be substituted in the announcement.

### THIS IS A DRILL

Controller Inject Message. **Accountability is to be simulated.** Use this information for the Plant Announcement.

" ALL PERSONNEL NOT PARTICIPATING IN TODAY'S EXERCISE SHOULD CONTINUE WITH THEIR ASSIGNED WORK. ACCOUNTABILITY WILL BE SIMULATED. DRILL PARTICIPANTS SHOULD TAKE THEIR APPROPRIATE ACTIONS. FOLLOW THE INSTRUCTIONS OF YOUR SUPERVISOR AND SECURITY OFFICERS."

### THIS IS A DRILL

## Emergency Announcement

**NOTE:**

If CODE RED is in progress, on-site emergency announcements should be held to a minimum and prohibit movement of personnel until CODE RED is secured.

### SOUND THE PLANT EMERGENCY ALARM

**ATTENTION ALL PERSONNEL! ATTENTION ALL PERSONNEL!**

A(N)

UNUSUAL EVENT  
ALERT  
SITE EMERGENCY  
GENERAL EMERGENCY

**HAS BEEN DECLARED AT** \_\_\_\_:\_\_\_\_  
(time)

### THE CAUSE OF THE EMERGENCY IS

Use the EC's description and time of declaration.

<input type="checkbox"/> Unusual Event	ALL MEMBERS OF THE ON-SHIFT EMERGENCY ORGANIZATION REPORT TO YOUR STATIONS.
<input type="checkbox"/> Alert or Higher	ALL MEMBERS OF THE <u>TEAM 3</u> EMERGENCY RESPONSE ORGANIZATION <u>and designated other participants</u> REPORT TO YOUR STATIONS.

### Actions For Non-Essential Personnel

<input type="checkbox"/> Unusual Event/Alert	ALL NON-ESSENTIAL PERSONNEL CONTINUE WITH YOUR NORMAL DUTIES UNLESS FURTHER INSTRUCTIONS ARE GIVEN.	
<input type="checkbox"/> Site/General	Normal hours	ALL PERSONNEL NOT PARTICIPATING IN TODAY'S EXERCISE SHOULD CONTINUE WITH THEIR ASSIGNED WORK. <u>ACCOUNTABILITY WILL BE SIMULATED.</u> DRILL PARTICIPANTS SHOULD TAKE THEIR APPROPRIATE ACTIONS. FOLLOW THE INSTRUCTIONS OF YOUR SUPERVISOR AND SECURITY OFFICERS.
	Off-normal hours	ALL NON-ESSENTIAL PERSONNEL PROCEED TO THE TSC AND AWAIT FURTHER INSTRUCTIONS.

Special instructions,(i.e. special routes during releases. seek cover during storms)\_\_\_\_\_

### PERSONNEL CAUTION (If required)

☐ **Potential** Airborne Contamination      THERE WILL BE NO EATING, DRINKING, SMOKING, OR CHEWING UNTIL FURTHER NOTICE.

(REPEAT ALL ANNOUNCEMENTS)

EC/RM APPROVAL

SCENARIO MESSAGE

Initiated by:	<u>Security Controller</u>	Location:	<u>MAF</u>	Message No.	<u>CI 5</u>
Delivered to:	<u>SSS/Sec. Coord</u>	Location:	<u>MAF/TSC</u>	Scenario Time:	<u>*</u>
		Phone No.	<u></u>		

**THIS IS A DRILL**

\* This message is to be injected by the Security Controller approximately 20 to 25 minutes after Accountability is called for.

All Personnel are accounted for, no problems encountered.

**THIS IS A DRILL**

SCENARIO MESSAGE

Initiated by: Clerk Location: COMM CELL Message No. 6  
Delivered to: Ops Supp Coord Location: TSC Scenario Time: 0900  
Phone No. 68710

**THIS IS A DRILL**

There is a huge water leak in the plant parking lot. Water is gushing out of the cracks in the blacktop in the road leading toward the training center. I had to walk around it to get to the CMB. It looks bad.

**THIS IS A DRILL**

SCENARIO MESSAGE

Initiated by: Security Officer Location: COMM CELL Message No. 7  
Delivered to: Security Coord Location: TSC Scenario Time: 0905  
Phone No. 68701

**THIS IS A DRILL**

One of our officers reports a water leak in the plant parking lot. Water is gushing out of the cracks in the blacktop in the road leading toward the training center. He said that the training center does not have any running water.

**THIS IS A DRILL**

## SCENARIO MESSAGE

Initiated by: MAF Controller Location: MAF/CAS Message No. 8  
Delivered to: SSS Location: MAF Scenario Time: 0935  
Phone No. Radio/68701

Refer to Mini-scenario # 7, Failure of Vehicle Barrier Assembly (VBA).

### **THIS IS A DRILL**

We got a problem out here. We've got some contractors that need to get their vehicles out of the PA and the VBA won't raise. We've got them through the turnstiles and accounted for, but we can't get their vehicles out. They can't leave without them and I don't want them blocking the driveway. What do you want to do?

### **THIS IS A DRILL**



## SCENARIO MESSAGE

Initiated by:	<u>Simulator Controller as EO</u>	Location:	<u>Simulator</u>	Message No.	<u>9</u>
Delivered to:	<u>CRS</u>	Location:	<u>Simulator</u>	Scenario Time:	<u>(0820)</u>
		Phone No.	<u>Gaitronics</u>		

### **THIS IS A DRILL**

The Motor Suction Pump is running but the shaft is not turning.

Inspection of the lube oil system shows pressure from the Turning Gear Oil Pump, but no oil being delivered to the bearings.

(Note: This is due to sticking or misaligned check valves in the system. This information will be supplied from the Controller after an EO is sent to check on the Lube oil system.)

### **THIS IS A DRILL**

SCENARIO MESSAGE

Initiated by:	<u>Simulator Controller</u>	Location:	<u>Simulator</u>	Message No.	<u>CI 10</u>
Delivered to:	<u>CRS</u>	Location:	<u>Simulator</u>	Scenario Time:	<u>1010</u>
		Phone No.	<u>Verbal</u>		

**THIS IS A DRILL**

Due to the Fire Protection Panel, KC 008, not being functional in the Simulator, this alarm will be initiated by a **Controller Inject Message**.

Alarm on KC 008, window 108/101, Aux. Building 2047' 6".

**THIS IS A DRILL**

## SCENARIO MESSAGE

Initiated by: TSC Controller Location: TSC Message No. CI 4a  
Delivered to: EC Location: TSC Scenario Time: (1015)  
Phone No. NA

The standard plant announcement associated with the General Emergency is not to be made. Assembly and Accountability will be simulated. The attached plant emergency announcement may be modified and used at the EC discretion or the text below may be substituted in the announcement.

### THIS IS A DRILL

Controller Inject Message. **Accountability is to be simulated.** Use this information for the Plant Announcement.

" ALL PERSONNEL NOT PARTICIPATING IN TODAY'S EXERCISE SHOULD CONTINUE WITH THEIR ASSIGNED WORK. ACCOUNTABILITY WILL BE SIMULATED. DRILL PARTICIPANTS SHOULD TAKE THEIR APPROPRIATE ACTIONS. FOLLOW THE INSTRUCTIONS OF YOUR SUPERVISOR AND SECURITY OFFICERS."

### THIS IS A DRILL

## Emergency Announcement

**NOTE:**

If CODE RED is in progress, on-site emergency announcements should be held to a minimum and prohibit movement of personnel until CODE RED is secured.

### SOUND THE PLANT EMERGENCY ALARM

**ATTENTION ALL PERSONNEL! ATTENTION ALL PERSONNEL!**

A(N)

UNUSUAL EVENT  
ALERT  
SITE EMERGENCY  
**GENERAL EMERGENCY**

**HAS BEEN DECLARED AT** \_\_\_\_:\_\_\_\_  
(time)

### THE CAUSE OF THE EMERGENCY IS

Use the EC's description and time of declaration.

<input type="checkbox"/> Unusual Event	ALL MEMBERS OF THE ON-SHIFT EMERGENCY ORGANIZATION REPORT TO YOUR STATIONS.
<input type="checkbox"/> Alert or Higher	ALL MEMBERS OF THE <u>TEAM 3</u> EMERGENCY RESPONSE ORGANIZATION <u>and designated other participants</u> REPORT TO YOUR STATIONS.

Actions For Non-Essential Personnel	
<input type="checkbox"/> Unusual Event/Alert	ALL NON-ESSENTIAL PERSONNEL CONTINUE WITH YOUR NORMAL DUTIES UNLESS FURTHER INSTRUCTIONS ARE GIVEN.
<input type="checkbox"/> General	Normal hours ALL PERSONNEL NOT PARTICIPATING IN TODAY'S EXERCISE SHOULD CONTINUE WITH THEIR ASSIGNED WORK. <u>ACCOUNTABILITY WILL BE SIMULATED.</u> DRILL PARTICIPANTS SHOULD TAKE THEIR APPROPRIATE ACTIONS. FOLLOW THE INSTRUCTIONS OF YOUR SUPERVISOR AND SECURITY OFFICERS.
	Off-normal hours ALL NON-ESSENTIAL PERSONNEL PROCEED TO THE TSC AND AWAIT FURTHER INSTRUCTIONS.

Special instructions,(i.e. special routes during releases. seek cover during storms) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### PERSONNEL CAUTION (If required)

☐ **Potential** Airborne Contamination THERE WILL BE NO EATING, DRINKING, SMOKING, OR CHEWING UNTIL FURTHER NOTICE.

(REPEAT ALL ANNOUNCEMENTS)

\_\_\_\_\_  
EC/RM APPROVAL

## SCENARIO MESSAGE

Initiated by:	<u>Citizen</u>	Location:	<u>Hwy 100</u>	Message No.	<u>Osage-1-01</u>
Delivered to:	<u>Osage Dispatcher</u>	Location:	<u>Linn, Mo.</u>	Scenario Time:	<u>0845</u>
		Phone No.	<u>573 897-2285</u>		

### **THIS IS A DRILL**

There is something on fire out by the school in Chamois. I can't tell what it is. I'm at the city park. There is a lot of black smoke.

### **THIS IS A DRILL**

SCENARIO MESSAGE

Initiated by:	Lillian Browns	Location:	Morrison, Mo.	Message No.	Gas-1-01
Delivered to:	<u>Gasconade County Dispatch</u>	Location:	<u>Drake, Mo.</u>	Scenario Time:	<u>0850</u>
		Phone No.	<u>573 437-7770</u>		

**THIS IS A DRILL**

Hello, this is Lillian Brown. Joe, my husband has been complaining of chest pains and said that his left arm is numb. I think he is having a heart attack. I need an ambulance right away. We live in the big white house just across from Sam's Service Station. It has a black Mercury parked out front. I'll watch for you.

**THIS IS A DRILL**

SCENARIO MESSAGE

Received From	George Smith	Location	Callaway Plant Security	Cal-1-01
Delivered to:	<u>Callaway 911</u>	Location:	<u>Fulton, Mo.</u>	Scenario Time: <u>0850</u>
		Phone No.	<u></u>	

**THIS IS A DRILL**

We have a report of a accident involving a van with several occuppants at Rt CC and Rt. O. We have no information on injuries.

**THIS IS A DRILL**

SCENARIO MESSAGE

Initiated by:	Citizen	Location:	Morrison, Mo.	Message No.	Gas-2-01
Delivered to:	<u>Gasconade County Dispatch</u>	Location:	<u>Drake, Mo.</u>	Scenario Time:	<u>0915</u>
		Phone No.	<u>573 437-7770</u>		

**THIS IS A DRILL**

This is Bill Williams. I live just up from the implement store. Something is on fire down there. Looks like one of the buildings but I can't tell for sure. We need the firemen out here.

**THIS IS A DRILL**



## SCENARIO MESSAGE

Initiated by:	Jamie Moore	Location:	Hwy 100, Near power plant.	Message No.	Osage-2-01
Delivered to:	Osage Dispatcher	Location:	Linn, Mo.	Scenario Time:	0920
		Phone No.			

**THIS IS A DRILL**

There are some railroad cars that have had Hwy. 100 blocked for about 30 minutes here at the power plant. I don't know what the problem is but I'm tired of sitting here. I need to get into Chamois. Can you all do anything?

**THIS IS A DRILL**

### SCENARIO MESSAGE

Initiated by:	Dave Biggs	Location:	Morrison, Mo.	Message No.	Gas-3-01
Delivered to:	<u>Gasconade County Dispatch</u>	Location:	<u>Drake, Mo.</u>	Scenario Time:	<u>0925</u>
		Phone No.	<u>573 437-7770</u>		

### THIS IS A DRILL

My name is Dave Biggs and my son is out on the Missouri River running his lines. He is upstream from the Gasconade probably 4 to 5 miles. I hear the siren going off and am worried about him. I don't know if he can hear the sirens on the river. Do you know if they cover the river? Maybe we need some one to go down there and see if they can find him. He is only 15 but there is another boy with him. I drove them down to the City Park in Chamois this morning to put the boat in so they can't leave if there is no one there to drive them. Is it okay if I drive over there to see. That's pretty close to the plant. Will I be in danger of getting radiated? I guess I better just go.

### THIS IS A DRILL

### SCENARIO MESSAGE

Initiated by:	Employee	Location:	Chamois Power Plant	Message No.	Osage-3-01
Delivered to:	Osage Dispatcher	Location:	Linn, Mo.	Scenario Time:	0930
		Phone No.			

### **THIS IS A DRILL**

This is Al from the power plant. We have an engine that quit on us while we were unloading coal and have the highway blocked out front. There is another one on the way but it will be about 30 minutes before it can get here. We wanted to let you know in case there was an emergency down Hwy 100. We'll get her moved as quick as we can.

### **THIS IS A DRILL**

## SCENARIO MESSAGE

Received From	<u>Jim Akers</u>	Location	<u>Rt.UU</u>		<u>Cal-2-01</u>
Delivered to:	<u>Callaway 911</u>	Location:	<u>Fulton, Mo.</u>	Scenario Time:	<u>0930</u>
		Phone No.			

**THIS IS A DRILL**

There is a house on fire on Rt. UU somewhere around CR 132.

**THIS IS A DRILL**

SCENARIO MESSAGE

Received From	Tim Parks	Location	CR 155 off of Rt. 0	Cal-3-01
Delivered to:	<u>Callaway 911</u>	Location:	<u>Fulton, Mo.</u>	Scenario Time: <u>0950</u>
		Phone No.	<u></u>	

**THIS IS A DRILL**

I heard there are all kind of problems at the nuclear plant. Is there any chance of it blowing up. I just moved here and am somewhat concerned. Do I need to evacuate.

**THIS IS A DRILL**

## SCENARIO MESSAGE

Received From	<u>Tony Meyers</u>	Location	<u>Steedman</u>		<u>Cal-4-01</u>
Delivered to:	<u>Callaway 911</u>	Location:	<u>Fulton, Mo.</u>	Scenario Time:	<u>1020</u>
	<u>                    </u>	Phone No.	<u>                    </u>		<u>                    </u>

**THIS IS A DRILL**

My wife got all excited when the sirens went off and I think she is having a heart attack. She can hardly breathe and says her chest is hurting. We need an ambulance. I'm afraid to try to move her myself. Can you get an ambulance here.

**THIS IS A DRILL**

## SCENARIO MESSAGE

Initiated by:	Unknown caller	Location:	Rhineland	Message No.	M-1-01
Delivered to:	<u>Mont.Co.911</u>	Location:	<u>Mont. City.</u>	Scenario Time:	<u>1030</u>
		Phone No.	<u></u>		

### **THIS IS A DRILL**

Hey, I heard the siren in Rhineland go off for evacuation. About 15 minutes ago, I saw a bunch of bikers on the trail heading toward Bluffton. They would be about half way there by now and I don't know if they will be able to hear the sirens. They didn't even slow down at the crossing and I know there is one of those red and white signs there to tell people what to do if they heard the sirens. I'm leaving but I am heading the other way. I couldn't haul of them anyway.

### **THIS IS A DRILL**

SCENARIO MESSAGE

Initiated by:	Elmer Sartainr	Location:	Americus	Message No.	M-2-01
Delivered to:	<u>Mont.Co.911</u>	Location:	<u>Mont. City</u>	Scenario Time:	<u>1030</u>
		Phone No.	<u></u>		

**THIS IS A DRILL**

Hello, I'm calling from Americus, I was leaving my home after the evacuation was ordered, headed toward Big Spring. I saw a tractor in the field north of the highway doing some kind of work. I don't know if they know there is an emergency. I kept going and am calling from Big Spring now. Some body should go check on that guy.

**THIS IS A DRILL**



SCENARIO MESSAGE

Initiated by:	Mildred Gerlinge	Location:	Chamois, the Main Street	Message No.	Osage-4-01
Delivered to:	Osage Dispatcher	Location:	Linn, Mo.	Scenario Time:	1040
		Phone No.			

**THIS IS A DRILL**

I guess you know that we are evacuating Chamois. I noticed a pick up truck backed up to the store across the street from the bank. It looked like there were 2 or 3 men carrying stuff out of the store and throwing it in the truck. It's a blue Chevrolet 4 wheel drive. If I didn't know better, I'd say they were looting the place.

**THIS IS A DRILL**

## SCENARIO MESSAGE

Received From	<u>Myra Bishops</u>	Location	<u>Hams Prairie</u>		<u>Cal-5-01</u>
Delivered to:	<u>Callaway 911</u>	Location:	<u>Fulton, Mo.</u>	Scenario Time:	<u>1050</u>
	<u>                    </u>	Phone No.	<u>                    </u>		<u>                    </u>

**THIS IS A DRILL**

This is Myra Bishop. I live next to the store at Hams Prairie. I saw the owners leave because of the plant, now there are two guys that look like they are looting the store. We need the cops out here quick. I won't be here but yos can see where they broke out the front door.

## THIS IS A DRILL

### SCENARIO MESSAGE

Initiated by:	Janet Kruger	Location:	Chamois City Park	Message No.	Osage-5-01
Delivered to:	Osage Dispatcher	Location:	Linn, Mo.	Scenario Time:	1055
		Phone No.			

#### **THIS IS A DRILL**

This is Janet Kruger and I am at the City Park. My son and 2 of his friends are out fishing. The sirens have been going off. I just don't know what to do. If they come back in, there will be no way for them to leave cause I have the car. I brought them over earlier and put the boat in for them. I can't just leave them and I'm afraid to stay. You said nothing like this could ever happen and now, here it is. That plant is probably going to blow up and kill these boys. I need help down here. I'm not leaving until I know they are safe.

#### **THIS IS A DRILL**

SCENARIO MESSAGE

Initiated by:	Bill Kruger	Location:	Gasconade Post Office	Message No.	Osage-6-01
Delivered to:	<u>Osage Dispatcher</u>	Location:	<u>Linn, Mo.</u>	Scenario Time:	<u>1055</u>
		Phone No.	<u></u>		

**THIS IS A DRILL**

My name is Bill Kruger and I am at the Post Office in Gasconade. We were fishing on the river and heard the sirens go off. We didn't want to go back toward the plant so we come up the Gasconade to town and are in the Post Office. I know my Mom won't leave till she knows I'm safe. I tried to call the house but no one answered. I bet she is down at the park waiting for us to come back in. Can you get some one down there to find her and let her know that we are all right?

**THIS IS A DRILL**

SCENARIO MESSAGE

Initiated by:	Jim Bailey	Location:	Rhineland	Message No.	M-3-01
Delivered to:	<u>Mont.Co.911</u>	Location:	<u>Mont. City</u>	Scenario Time:	<u>1100</u>
		Phone No.	<u></u>		

**THIS IS A DRILL**

This is Jim Bailey again. There is a lady in that car at Bluffton and she was hurt. I couldn't get her out of the car but I told her that help was on the way. By the way, I did smell gas but I didn't know what to do. When that siren goes off, I'm getting out of Dodge. That plant scares me to death.

**THIS IS A DRILL**

SCENARIO MESSAGE

Initiated by:	Jim Bailey	Location:	Rhineland	Message No.	M-4-01
Delivered to:	<u>Mont.Co.911</u>	Location:	<u>Mont. City</u>	Scenario Time:	<u>1100</u>
		Phone No.	<u></u>		

**THIS IS A DRILL**

This is Jim Bailey again. There is a lady in that car at Bluffton and she was hurt. I couldn't get her out of the car but I told her that help was on the way. By the way, I did smell gas but I didn't know what to do. When that siren goes off, I'm getting out of Dodge. That plant scares me to death.

**THIS IS A DRILL**

## Rumor Control Messages

Time	Message From	Delivered to	Event/Message
0950	Tommy Wild	Rumor Control	<b>This is a Drill.</b> I just heard that they evacuated everyone from Callaway. How can they do that? Doesn't some have to stay there? <b>This is a Drill.</b>
1000	Betty House	Rumor Control	<b>This is a Drill.</b> My friend that works out at Callaway, just called and said that she was being sent home and would be by to pick up her kids. Should I let her have them, isn't she probably contaminated or dangerous or something? <b>This is a Drill.</b>
1050	Betty Smith	Rumor Control	<b>THIS IS A DRILL</b> I live on AD about a mile from the plant. My radio just went off and said to evacuate. Is this just a test or is it the real thing? <b>THIS IS A DRILL</b>
1055	Frank Joist	Rumor Control	<b>THIS IS A DRILL.</b> This is the owner of Steedmans Only Bar. My customers reported the sirens going off. We don't have a radio or TV and don't know what to do. Can you help us? Tell us which way to go. <b>THIS IS A DRILL.</b>
1057	Doris Wrenfrow	Rumor Control	<b>THIS IS A DRILL</b> I'm located just north of I-70 near Williamsburg. I've had 2 calls from friends who live on the other side of the highway saying the plant blew up and to evacuate. What do I need to know about this? Should I evacuate too? They only live about 300 yards from me. <b>THIS IS A DRILL.</b>
1106	Joe Pennyworth	Rumor Control	<b>THIS IS A DRILL.</b> I heard that the plant blew up and is on fire and that all kinds of radiation is leaking from it. You all said this couldn't happen. I want to know what the hell is going on. <b>THIS IS A DRILL.</b>
1109	Joe Pennyworth	Rumor Control	<b>THIS IS A DRILL.</b> Hey, it's me again; now they are saying that terrorist took over the plant and are blowing it up. What's going on? What don't you tell us what's going on. We need to know. If there are terrorist there. I'm afraid to go on the road. I have to go right by there to get away from the house. <b>THIS IS A DRILL.</b>

1113	Jasmine Duvall	Rumor Control	<b>THIS IS A DRILL.</b> Up here at Kingdom City, the highways are all blocked up and everybody is going away from Fulton. What is going on? Is there an emergency somewhere? Are we in danger? I want to know what is going on and I want to know now. <b>THIS IS A DRILL.</b>
1118	Jason Jones	Rumor Control	<b>THIS IS A DRILL.</b> I heard there was an explosion at the plant, maybe a bomb. Is this correct? What's being done about it? <b>THIS IS A DRILL.</b>
1122	KFAL	Rumor Control	<b>THIS IS A DRILL.</b> This is the news editor for KFAL in Fulton. We know that something is going on at the plant. We have a constitutional right to this information and I want someone on the phone that can answer my questions or somebody is going to hear about it. I've already talked to our lawyers and we will sue if we have to <b>THIS IS A DRILL.</b>
1124	Ernest Krakow	Rumor Control	<b>THIS IS A DRILL.</b> The siren has been going off in Chamois and I heard there was a train wreck with nuclear stuff that wrecked. How can I find out what is going on? <b>THIS IS A DRILL.</b>
1127	KLIK	Rumor Control	<b>THIS IS A DRILL.</b> We have a report from a citizen that the nuclear plant in Fulton was taken over by terrorist and its on fire. Who do we talk to to get an official release? No one answer the phone at the plant. Its like all the phones are busy or they all left the country. We need to know so we can let the public know what's going on. <b>THIS IS A DRILL.</b>
1130	Anonymous	Rumor Control	<b>THIS IS A DRILL.</b> Listen very carefully, this is Citizens Against Nuclear Power. We are responsible for the Callaway Plant explosion. We have infiltrated the organization and know the damage and danger they pose to the public. This is only the first plant to blow but it will continue to happen until you shut down all the nuclear power in this country. <b>THIS IS A DRILL.</b>



1135	KLIK	Rumor Control	<b>THIS IS A DRILL.</b> This is Croc Doomsday from KLIK. We just received a call from some group called Citizens Against Nuclear Power. They claimed that they had blew up the Callaway Plant. We need some answers and need them know. We have a right to report on news. If we don't talk to someone in authority, we are going to put this call on the air. <b>THIS IS A DRILL.</b>
1140	Betty Smith	Rumor Control	<b>THIS IS A DRILL</b> This is Betty Smith again. We are at Gaspar's in Kingdom City. We are seeing traffic on 54 Hwy going south. Is the emergency over? Can we go back home now? I only live about a mile from the plant. <b>THIS IS A DRILL.</b>
1143	Jake Doad	Rumor Control	<b>THIS IS A DRILL.</b> My friends and me just came in off the river at Moke and am now sitting in the Mokane Bar. The town is deserted. We heard some sirens but figured it was just another test. What's going on? There is no one in the bar, the door was open and the beer is cold. Are we going to die and don't know it? <b>THIS IS A DRILL.</b>
1145	Allen White	Rumor Control	<b>THIS IS A DRILL.</b> This is Allen White. I teach a class on Journalism at Columbia College and I want to bring my class down to watch things. What does it take to get into the Media Center? <b>THIS IS A DRILL</b>
1148	Bobbi Jobuda	Rumor Control	<b>THIS IS A DRILL.</b> My neighbor just told me that CNN and all the networks will be at Jeff City. Can you tell me where they will be? Me and the kids want to come down and try and get on TV. <b>THIS IS A DRILL</b>
1150	Alice Cooper	Rumor Control	<b>THIS IS A DRILL.</b> I understand that I probably need to evacuate, but I've got 17 cats, 4 dogs, and two birds that I have to take care of. I've been told that I can't take them with me, so who will care for them? If nobody will, I may not leave. <b>THIS IS A DRILL</b>
1155	Doug Cooper	Rumor Control	<b>THIS IS A DRILL.</b> This is Doug Cooper and I think my wife just called you, she's a little off in the head. Don't pay any attention to her. I'll take care of her. <b>THIS IS A DRILL</b>

1208	UMRR	SEOC Control Room (Delivered to Rumor Control)	<b>This is a drill.</b> We have been getting calls at our switchboard from people that think there was an explosion or an accident at the research reactor. Do you have any idea what would cause these calls? <b>This is a drill.</b>
1217	KMOX	SEOC Control Room (Delivered to Rumor Control)	<b>This is a drill.</b> We have had reports of a massive radiation leak at the Callaway Plant. Is St. Louis in danger? Shouldn't you be telling us something? What time is the evacuation of Metro St. Louis scheduled? <b>This is a drill.</b>
1220	Edith Bunker	Rumor Control	<b>This is a drill.</b> I just got back from shopping. When I got home, my radio was flashing red. What does that mean? <b>This is a drill.</b>
1225	Fay Dry	Rumor Control	<b>This is a drill.</b> This is Fay Dry from the Crawdad Alliance. What is Ameren and the state hiding at Callaway. Is this the real China Syndrome? What is the real truth? <b>This is a drill.</b>
1226	Bobbi Jobuda	Rumor Control	<b>THIS IS A DRILL.</b> This is Bobbi again. I lost the directions to that TV thing. What were those again? <b>THIS IS A DRILL</b>
1230	Richard Weed	Rumor Control	<b>THIS IS A DRILL.</b> I love the wine from Stone Hill. Will this hurt the winery and this years crop? What about the bottles that are in storage? Will there be a sale? <b>THIS IS A DRILL</b>
1245	Harold Storm	Rumor Control	<b>THIS IS A DRILL.</b> I'm with John's Hopkins Medical Research staff. Can I get the names of some of the evacuees so we can start a initiate a research program on the effects of radiation and the genetic effects of exposure on stem cells. We must obtain donors and samples within the first four weeks to ensure our data is untainted. <b>THIS IS A DRILL</b>
1250	John Public	Rumor Control	<b>THIS IS A DRILL.</b> My neighbor told me that those media things aren't open to everyone, just the media. Why are those media conference things open to the public? It seems that you're hiding things. Why can't I come to one of them? <b>THIS IS A DRILL</b>

1252	Mary Fanatic	Rumor Control	<b>THIS IS A DRILL.</b> My neighbor who's a nurse told me to make sure that I don't touch anyone that was in that area that they evacuated. That stuff can come off and hurt me. Is that true? <b>THIS IS A DRILL</b>
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## **Mini scenario # 1**

### **OSP-BB-00009 Results**

#### **PURPOSE/GOAL**

The purpose of this mini-scenario is to provide RCS leak rate information that is in excess of the Unusual Event criteria of 10 GPM unidentified leakage.

#### **PRECAUTIONS AND EXTENT OF PLAY**

Do not allow any plant equipment to be operated if it may impact plant operation.

#### **NARRATIVE SUMMARY**

RCS leakage has been elevated over the past few days, but has been within the limits of Tech Specs. A containment entry is being planned for this morning to look for the leak. An OSP-BB-00009 was completed on the Owl watch and showed increased leakage. A two-hour BB-9 was started at 0515 as a backup to the earlier data.

#### **TOOLS, PARTS, SPECIAL EQUIPMENT, AND DOCUMENTS**

A copy of the current OSP-BB-00009 is attached.

#### **INDICATIONS AND INFORMATION**

The two hour OSP-BB-00009 will show an Unidentified leak rate of 15.07 GPM. An Unusual Event should be declared under EAL 4R.

#### **OBSERVATION POINTS**

1. Did the Crew recognize and act upon the information that RCS leakage is greater than EAL value?

#### **SCENARIO COMMENTS**

(List any comments the players may have had about the scenario or how it may have been better.)

Strengths:

Weaknesses:

Comments:

Controller: \_\_\_\_\_ Date: \_\_\_\_\_

**OSP-BB-00009, REVISION 10, ST-04025**  
**RCS INVENTORY BALANCE, PLANT STATUS**

DATE: 10/03/01

Initial Test Time Was: 0515

Final Test Time Was: 0715

THIS PROCEDURE WAS PERFORMED BY:

Data Was Entered By: Steven V. Aldrich- \_\_\_\_\_(Initials)

Data Was Checked By: Mark C. Green- \_\_\_\_\_(Initials)

1. The current mode for the plant is Mode: 1
2. There are 4 RCP's in operation.
3. The PZR spray source is the RCS.
4. The following briefly describes the flow path(s) and flow rate established for letdown and charging:  
Charging via the NCP to Loop 1, 120 gpm letdown.
5. Make-up calculations (for Step 6.1 on Att. 6):  
The initial totalizer reading = 60834  
The final totalizer reading = 62534  
The total make-up was 1700 Gallons
6. Chemical additions (for Step 6.1 on Att. 6):  
0 Gallons; Purpose: Nothing Added
7. Letdown divert calculations (for Step 6.2 on Att. 6):  
The time divert started =  
The time divert ended =  
The letdown flow rate = 120 GPM.  
The total minutes of divert = 0  
The total amount diverted = 0 Gallons.
8. Samples taken (for Step 6.2 on Att. 6):  
0 Gallons; Purpose: No Samples Were Taken
- 9a. Primary to secondary leakage (for Step 6.2 on Att. 6):  
0.000000 GPM.
- 9b. SI Test Header flow (for Step 6.2 on Att. 6):  
0 GPM.
- 9c. Other identified leakage(s), (for Step 6.2 on Att. 6):  
0 GPM; Source: None  
0 GPM; Source: None

### RCS INVENTORY BALANCE INPUT DATA

PARAMETER	INITIAL VALUE	FINAL VALUE
TIME (MILITARY FORMAT)	0515	0715
RCDT LEVEL (%)	40.5	40.5
VCT LEVEL (%)	55.0	49.0
PZR LEVEL (%)	57.1	57.1
PRT LEVEL (%)	70.8	70.9
PRT TEMPERATURE (DEGF)	90.0	90.0
RCS TEMPERATURE (DEGF)	584.4	584.4
RCS PRESSURE (PSIG)	2235.0	2235.0
RCDT TOTALIZER (GAL)	0	0

NOTE:

SOME OF THE ABOVE VALUES MAY BE AVERAGE VALUES,  
DEPENDENT UPON WHICH METHOD WAS SELECTED FOR  
DATA ACQUISITION.

## RCS INVENTORY BALANCE CALCULATIONS

### 1.0 CHANGE IN MASS OF WATER CONTAINED IN THE RCDT:

- 1.1 Specific Volume =  $0.01605 \text{ Ft}^3/\text{Lbm}$
- 1.2 Delta-M (rcdt) =  $0.000 \text{ Lbm}$

### 2.0 CHANGE IN MASS OF WATER CONTAINED IN THE VCT:

- 2.1 Specific Volume =  $0.01605 \text{ Ft}^3/\text{Lbm}$
- 2.2 Delta-M (vct) =  $1020.774 \text{ Lbm}$

### 3.0 CHANGE IN MASS OF WATER CONTAINED IN THE PRESSURIZER:

- 3.1 Specific Volume of Liquid =  $0.02697 \text{ Ft}^3/\text{Lbm}$   
Specific Volume of Vapor =  $0.15696 \text{ Ft}^3/\text{Lbm}$
- 3.2 Delta-M (pzt) =  $0.000 \text{ Lbm}$

### 4.0 CHANGE IN MASS OF WATER CONTAINED IN THE PRT:

- 4.1 Specific Volume =  $0.01610 \text{ Ft}^3/\text{Lbm}$
- 4.2 Delta-M (prt) =  $117.431 \text{ Lbm}$

### 5.0 CHANGE IN MASS OF WATER CONTAINED IN THE RCS LOOPS:

- Tavg: Avg. Initial T =  $584.4 \text{ Deg. F}$   
Avg. Final T =  $584.4 \text{ Deg. F}$
- Pressure: Avg. Initial P =  $2235.0 \text{ PSIG}$   
Avg. Final P =  $2235.0 \text{ PSIG}$
- 5.1 Specific Volume, Initial =  $0.02250 \text{ Ft}^3/\text{Lbm}$ .  
Specific Volume, Final =  $0.02250 \text{ Ft}^3/\text{Lbm}$ .
- 5.2 Delta-M (rcs) =  $0.000 \text{ Lbm}$



6.1 TOTAL RCS LEAKAGE:

Delta-M (vct) = 1020.774 Lbm  
Delta-M (pzt) = 0.000 Lbm  
Delta-M (rcs) = 0.000 Lbm  
Subtotal = 1020.774 Lbm, = 122.56 Gal.  
+ 1700 Gal. (Makeup)  
+ 0 Gal. (Chemicals Added)  
= 1822.556 Gal./ 120 Test Duration (Min.)  
  
= 15.188 GPM TOTAL RCS LEAKAGE

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6.2 IDENTIFIED RCS LEAKAGE:

Delta-M (rcdt) = 0.000; Lbm  
Delta-M (prt) = 117.431 Lbm  
Subtotal = 117.431 Lbm, = 14.10 Gal.  
+ 0 Gal. (Diverted)  
+ 0 Gal. (Samples Taken)  
= 14.099 Gal./ 120 Test Duration (Min.)  
+ 0.000000 Gal/Min (Primary/Secondary)  
+ 0 Gal/Min (SI Test Header flow)  
+ 0 Gal/Min (Other Identified Leakage)  
  
= 0.117 GPM IDENTIFIED RCS LEAKAGE

NOTE: THE IDENTIFIED RCS LEAKAGE MUST BE LESS THAN  
10.0 GPM TO MEET THE ACCEPTANCE CRITERIA .

---

6.3 UNIDENTIFIED RCS LEAKAGE:

15.188 GPM TOTAL RCS LEAKAGE  
- 0.117 GPM IDENTIFIED RCS LEAKAGE  
  
= 15.070; GPM UNIDENTIFIED RCS LEAKAGE

NOTE: THE UNIDENTIFIED RCS LEAKAGE MUST BE LESS THAN  
1.0 GPM TO MEET THE ACCEPTANCE CRITERIA.

## **Mini scenario # 2**

### **Trip of "A" Safety Injection Pump.**

#### **PURPOSE/GOAL**

The purpose of this mini-scenario is to take away a piece of safety equipment that even though it is not needed at this time, it is still essential equipment that is needed.

#### **PRECAUTIONS AND EXTENT OF PLAY**

1. Do not allow any plant equipment to be operated if it may impact plant operation.
2. Any protective clothing or equipment necessary for the job should be used and not simulated.
3. Breaker cubicles should not be opened or operated in any manner.

#### **NARRATIVE SUMMARY**

When the crew manually initiates Safety Injection (SI), the "A" SI pump will attempt to start, but will trip on overcurrent on all three phases. "B" SI pump will start and provide injection flow. An EO will be dispatched to the Switchgear room to investigate. Upon inspection of the breaker cubicle (NB0103), he will observe that flags have dropped for all three phases (150/151 relays). No other indications of damage can be observed.

If an EO is dispatched to inspect the pump, he will observe that the key in the coupling has sheared. The coupling may need to be replaced and the pump and motor re-aligned. Maintenance will need to evaluate if just key replacement would provide temporary service.

A new key and coupling will need to be obtained from Stores or the manufacturer.

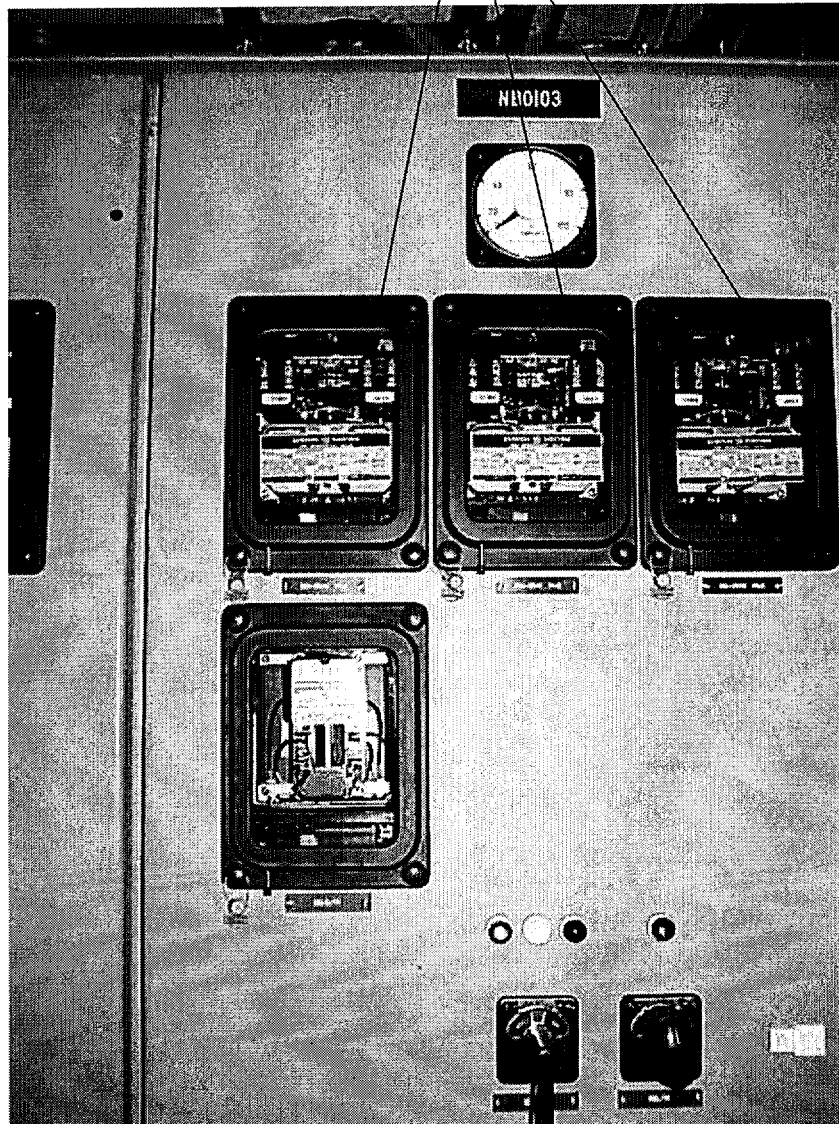
#### **TOOLS, PARTS, SPECIAL EQUIPMENT, AND DOCUMENTS**

A replacement key as a minimum will need to be located and obtained.  
A replacement coupling will need to be located and possible obtained.

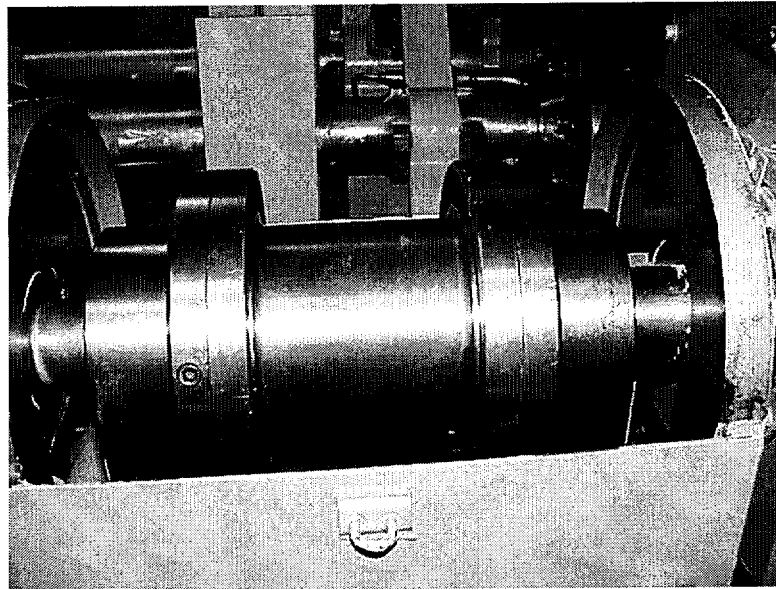
#### **INDICATIONS AND INFORMATION**

Inspection by the EO or report from initial repair team from the OSA to the breaker will indicate that all three phases, A, B, and C, observed on the 150/151 relay windows have red flags for over-current. No other electrical damage is obvious.

Flags present (dropped) on all three phases  
indicating an over-current condition.



"A" Safety Injection Pump (NB0103)



Pump end

Coupling "A" SI Pump

Motor end



Key and keyway  
for "A" SI Pump.

Key has sheared.

Initial inspection by the Primary EO or the initial repair team from the OSA will determine that the key in the coupling between the "A" SI motor and pump has sheared. The motor will turn, but the pump will only turn with significant force applied. This lack of free rotation in the pump end should cause the alignment to be questioned. Additionally the coupling should be inspected to ensure that it is not damaged. It would be advisable to replace the coupling if one is available on site with minimal delay in procuring.

Realistic time estimates for the mechanical repairs should be completed. The completion of the pump repairs will not be necessary for the termination of the Exercise, but the OSA should pursue repairs with the attitude that it will be needed.

## **OBSERVATION POINTS**

1. Did the OSA dispatch teams to either complete the initial inspections or confirm the initial inspections or reports?
2. Was the team briefing concise and timely. Was too much information put out for the team(s) to allow them to quickly get in the field and perform their assigned tasks?
3. Did the briefing include safety as well as radiological caution?
4. Did the needed information get from the team to OS Coord. to the Stores personnel or Logistics Support personnel to allow repairs in a timely manner?

## **SCENARIO COMMENTS**

(List any comments the players may have had about the scenario or how it may have been better.)

Strengths:

Weaknesses:

Comments:

Controller: \_\_\_\_\_ Date: \_\_\_\_\_

## SCENARIO MESSAGE

Initiated by:	<u>EO Repair Team</u>	Location:	<u>NB Switchgear Room</u>	Message No.	<u>2</u>
Delivered to:	<u>CRS/SS E Team Coord.</u>	Location:	<u>Control Room Simulator OSA</u>	Scenario Time:	<u>(0800) (0830)</u>
		Phone No.	<u>Gaitronics/Radio</u>		

Refer to Mini-scenario # 2, Failure of "A" SI pump to start.

The EO sent to the check breakers (NB 0103) or the repair team may call in this message when they respond.

### **THIS IS A DRILL**

This is the Secondary EO, I'm here at the breakers for "A" SI pump and it looks like all the 150/151 flags for all three phases have dropped. It appears that it tripped on an overcurrent condition on all three phases. I can't see any other indication of any trouble here.

### **THIS IS A DRILL**

## SCENARIO MESSAGE

Initiated by:	<u>Primary EO Repair Team</u>	Location:	<u>"A" SI Pump</u>	Message No.	<u>2a</u>
Delivered to:	<u>CRS/SS E Team Coord</u>	Location:	<u>Control Room Simulator OSA</u>	Scenario Time:	<u>(0800) (0830)</u>
		Phone No.	<u>Gaitronics/ Radio</u>		

Refer to Mini-scenario # 2, Failure of "A" SI pump to start.

The EO sent to the check breakers (NB 0103) or the repair team may call in this message when they respond.

**Controller's Note: Physical contact with the actual pump should not be allowed. The pump will be operable and may start at any time. The extent of actual actions would be to open the guard around the coupling.**

### THIS IS A DRILL

This is the Primary. I've looked at the "A" SI pump and I can't say for sure but it appears that the key in the coupling between the motor and pump may have sheared. It's pretty tough to tell for sure because of the guard around the coupling. I think that you need to get maintenance down here to be sure. I'm afraid to try to roll either the pump or motor by hand. We probably ought to go ahead and get it tagged out.

If the repair team is making the report, they may report that the key is sheared, the coupling may have damage to the point that it will not be re-useable if key replaced.

If coupling is removed as part of initial response, they may report that the motor can be turned by hand (not binding), but the pump can not be rolled with the people and equipment they have with them.

Stores should start looking for replacement coupling and key.

### THIS IS A DRILL



## **Mini scenario # 3**

### **Failure of Water tight Door # 11131**

#### **PURPOSE/GOAL**

This condition has no immediate nuclear safety concern, but this mini-scenario should require a decision to be made concerning the repair of the door or to post a person at the door. This will later on force discussion and a decision to be made on leaving the post or imposing protective measures.

#### **PRECAUTIONS AND EXTENT OF PLAY**

1. Do not allow any plant equipment to be operated if it may impact plant operation.
2. Any protective clothing or equipment necessary for the job should be used and not simulated. If respiratory protection is required, it may be demonstrated and then removed after a short use period.

#### **NARRATIVE SUMMARY**

Depending on the first responder, either the EO or the repair team, to enter this area (Room 1113), the door will be opened so quickly that the driving gear that is connected to the handwheel will shear at least two teeth and jam the latching mechanism in the open position. The shaft will also be bent such that full engagement of the gears cannot be achieved and the latching mechanism will fully engage the frame.

#### **TOOLS, PARTS, SPECIAL EQUIPMENT, AND DOCUMENTS**

Replacement door, complete unit (specs should be available from Security or Civil Engineering).  
Gears and bushings may be fabricated.

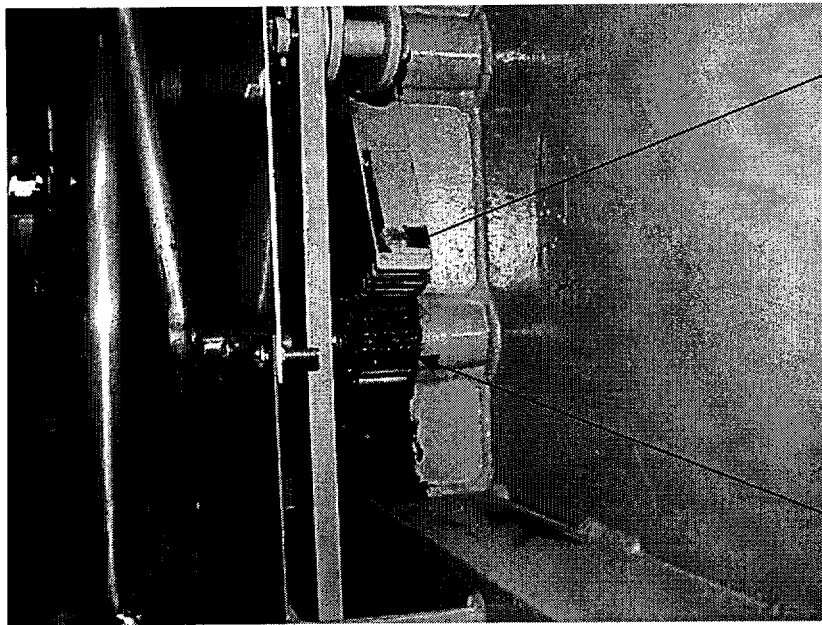
#### **INDICATIONS AND INFORMATION**

This damage will be done by either the EO that is sent to investigate the SI pump failure or the Repair Team whichever is dispatched to the scene and arrives first.

The door locking mechanism is loose and in their haste to enter the room, the handwheel was spun open and as a result, the gears damaged to point that it will not drive the latching mechanism to the point that it will hold the door shut. Some teeth on the drive gear which is attached to the handwheel shaft has sheared off and appears to be preventing movement in the closing direction.

The quickest repair would probably be to pull the pins and replace the complete door. Access to the gears is restricted and will be very difficult to do anything to repair the gears.

See the picture below for information



Locking mechanism gear

Drive gear with damaged teeth.  
Will not fully engage due to  
damaged teeth and slightly bent  
shaft

Door # 11131

Operations may request that Security post an Officer at this location instead of repairing the door, however the Officer should not be omitted from the accountability process and once the release starts, a decision will need to be made in regards to what to do for him.

### **OBSERVATION POINTS**

1. Did adequate information come into the OS Area to allow replacement/repairs to be made?
2. Did Stores or the Logistics group assist in locating and procuring the replacement parts?
3. If a replacement door was the "fix", where were the specifications located, who provided the specs, and what was the anticipated time to complete the replacement?

4. What time was the repair team assembled?

What time was the briefing completed and the team dispatched to the field?

What time did the first information on the extent of the necessary repairs get back to the OSA?

### **SCENARIO COMMENTS**

(List any comments the players may have had about the scenario or how it may have been better.)

Strengths:

Weaknesses:

Comments:

Controller: \_\_\_\_\_ Date: \_\_\_\_\_

## SCENARIO MESSAGE

Initiated by:	<u>Primary EO Repair Team</u>	Location:	<u>"A" SI Pump Room</u>	Message No.	<u>3</u>
Delivered to:	<u>CRS/SS E Team Coord</u>	Location:	<u>Control Room Simulator OSA</u>	Scenario Time:	<u>(0805) (0845)</u>
		Phone No.	<u>Gaitronics/Radio</u>		

Controllers should refer to Mini-scenario # 3 for additional information. If the Primary EO is dispatched to the room before the Repair Team, then the EO will break the door. If the EO has not been dispatched, then the Repair Team will damage the door upon their entry.

### THIS IS A DRILL

This is the Primary EO (or Repair Team as it applies). Apparently as I (we) entered the SI Pump Room here, I (we) must have opened the door too quickly or something. Anyway, I (we) can't get the door latch when we shut. The door will swing, but the handwheel is hung up and the locking levers won't engage the door frame.

### THIS IS A DRILL

## **Mini scenario # 4**

### **Loss of Turbine Lift Oil Pumps**

#### **PURPOSE/GOAL**

The purpose of this mini-scenario is to make the turbine lift oil pumps inoperable. That will place the turbine bearings in danger of being destroyed (wiped). Although this is not of safety significance, it is a major commercial risk and will require operator attention.

#### **PRECAUTIONS AND EXTENT OF PLAY**

1. Do not allow any plant equipment to be operated if it may impact plant operation.
2. Any protective clothing or equipment necessary for the job should be used and not simulated.
3. Breaker cubicles and flow indicators should not be opened or operated in any manner.

#### **NARRATIVE SUMMARY**

As the turbine coasts down following the reactor trip the oil pressure in the Turbine lube oil system being supplied from the main shaft pump decreases to the point where a start signal is received by the Motor Suction Oil Pump and the Turning Gear Oil Pump. Lift oil pumps will arm and be readied for start when the turbine coasts down to approximately 900 RPM.

The Motor Suction Oil Pump will show that it is running, but no discharge pressure will be shown due to it twisting its shaft until it breaks upon starting.

The Turning Gear Oil Pump will also indicate that it is running and will have discharge pressure indicated locally, but will not be delivering oil to the bearings due to the dual check valves in the line sticking shut. The indicated pressure locally will not allow the Emergency Bearing Oil Pump to start. If the operators start this pump, the DC breaker will trip on blown fuses.

Fuses will need to be obtained from Stores or the supply lockers and replaced to allow the Emergency Bearing Oil pump to run.

#### **TOOLS, PARTS, SPECIAL EQUIPMENT, AND DOCUMENTS**

Replacement fuses for the Emergency Bearing Oil Pump, as a minimum, will need to be located and obtained.

#### **INDICATIONS AND INFORMATION**

Inspection by the EO of the Motor Suction Pump will show the motor running but the shaft not turning.

Inspection of the lube oil system will show pressure from the Turning Gear Oil Pump, but no oil is being delivered to the bearings. This is due to sticking or mis-aligned check valves in the system. This information will be supplied from the Controller after an EO is sent to check on the Lube oil system.

The DC Power fuses for the Emergency Lube Oil Pump are found blown. This may be concluded by troubleshooting or given as information by the controller after trouble shooting of the failure of the Emergency Bearing Oil Pump.

### **OBSERVATION POINTS**

Observe the recognition of the significance of this event for turbine protection. Is it realized that the turbine generator is spinning down without lube oil?

How are fuses procured for the Emergency Bearing Oil Pump?

## **SCENARIO COMMENTS**

(List any comments the players may have had about the scenario or how it may have been better.)

Strengths:

Weaknesses:

Comments:

Controller: \_\_\_\_\_ Date: \_\_\_\_\_

SCENARIO MESSAGE

Initiated by:	<u>Simulator Controller as EO</u>	Location:	<u>Simulator</u>	Message No.	<u>9</u>
Delivered to:	<u>CRS</u>	Location:	<u>Simulator</u>	Scenario Time:	<u>(0820)</u>
		Phone No.	<u>Gaitronics</u>		

**THIS IS A DRILL**

The Motor Suction Pump is running but the shaft is not turning.

Inspection of the lube oil system will show pressure from the Turning Gear Oil Pump, but no oil being delivered to the bearings.

(Note: This is due to sticking or misaligned check valves in the system. This information will be supplied from the Controller after an EO is sent to check on the Lube oil system.)

**THIS IS A DRILL**



# **Mini scenario # 5**

## **Failure of SD RE-38**

### **Fuel Building 2047' Fuel Pool Area Rad Monitor**

#### **PURPOSE/GOAL**

This mini-scenario will prove a distraction for Health Physics. It will necessitate a decision to be made to either ignore the alarm or to send a technician in to verify the alarm.

#### **PRECAUTIONS AND EXTENT OF PLAY**

1. Do not allow any plant equipment to be operated if it may impact plant operation.
2. Any protective clothing or equipment necessary for the job should be used and not simulated.
3. Survey instruments of the appropriate ranges should be taken to the area.

#### **NARRATIVE SUMMARY**

Approximately 0830, SD-RE-38, Area Radiation Monitor, in the Fuel Building (2047' elevation) will alarm and peg high ( $>10,000$  mr/hr). There have been no changes to the plant conditions that would support this monitor going into Hi Hi alarm.

A technician should be dispatched to investigate. He should take survey instrument in the appropriate ranges for the area that he will be entering (capable of at least 10R/hr ).

His survey will show that there are no elevated radiation levels in the area. Attempt to reset the detector locally will not be successful. It will need to be de energized and declared out of service to silence the alarms. I&C may assist if necessary.

#### **TOOLS, PARTS, SPECIAL EQUIPMENT, AND DOCUMENTS**

No special tools or equipment should be required. The survey instruments are available to all techs.

#### **INDICATIONS AND INFORMATION**

The local indications will be such that the light is flashing and the audible alarm is sounding. The local meter will be pegged high, but radiation levels measured throughout the Fuel Building will be normal.

The detector may be de-energized and that will silence the alarm and take the detector OOS.

The monitor may be de-energized at SD 065 in the back of the Control Room, but local power will still be available to the light and alarm.

#### **OBSERVATION POINTS**

1. Were the plant conditions reviewed for events that could have caused the increase in radiation level

with the technician as part of his briefing?

2. Was the technician informed of the radiation levels prior to being dispatched?

If discussed, What was the maximum level?

3. What time was the briefing started? Was an Electrician or I&C Tech sent along with the R/C Tech?
4. What time did the Tech (team) leave for the field?
5. Were the proper techniques used to approach the area in question? (Higher scale to lower.)
6. Was the status called back to the OSA and recommendation made?

## **SCENARIO COMMENTS**

(List any comments the players may have had about the scenario or how it may have been better.)

Strengths:

Weaknesses:

Comments:

Controller: \_\_\_\_\_ Date: \_\_\_\_\_

## **Mini scenario # 6**

### **Loss of Potable Water to the Training Center**

#### **PURPOSE/GOAL**

**The purpose of this mini-scenario is to provide a distraction to the TSC. Although this is not of safety significance, it is an item that will require attention.**

#### **PRECAUTIONS AND EXTENT OF PLAY**

1. Do not allow any plant equipment to be operated if it may impact plant operation.
2. Any protective clothing or equipment necessary for the job should be used and not simulated.
3. Plant equipment should not be operated in any manner.
4. The isolation valve should be located on the prints and physically located, but water is not to be secured to the Training Center.

#### **NARRATIVE SUMMARY**

A large potable water leak develops in the parking lot on the line supplying the Training Center. The leak is gushing out of the ground in the parking lot, Plant west of the Training Center.

Water pressure in the TSC and other out buildings is low. The drinking fountain has very little pressure and the toilets will not flush properly in the TSC.

If a team is sent to the Demin Building, the potable water pumps are all running and level in the Potable water storage tank is dropping.

Isolation of the leak to the training center can be accomplished by closing the Potable Water valve VKD1026H on the 3 inch line running to the training center. Print 8600-X-89768 shows the Potable Water loop P&ID.

#### **TOOLS, PARTS, SPECIAL EQUIPMENT, AND DOCUMENTS**

8600 series prints showing the Site Layout.

A valve wrench for the Potable Water valves will be needed to operate the buried valve. The valve should not be operated, but it must be physically located and actions simulated for closing the valve.

#### **INDICATIONS AND INFORMATION**

All of the Potable Water pumps are running and the storage tank is losing Level. These indications are in the Demin Building and will need to be observed locally.

The location of the leak makes it obvious that the line is running toward the Training Center.

Water pressure in the TSC is low. The water fountain is barely flowing and the toilets won't flush.

### **OBSERVATION POINTS**

Two messages are being received about this leak to the TSC. One message will be a clerk on her way to the Assembly area in the CMB to the Ops Support Coordinator in the TSC. The other will be a call from MAF to the Security Coordinator in the TSC. Observe the flow of this data to the EC.

This will be an obvious leak of potable water due to location and low water pressure in the TSC. If a team is sent to the Demin Building to check on the status of the Potable Water System, the dispatch and reporting back should be observed.

If a team is sent to the valve to close the line to the training center, the team dispatch and tool pickup should be observed. The evolution should continue to the point where the valve is actually going to be turned. The controller should not allow the closure of this valve since it will isolate the training center. Reporting of the valve closure should also be observed

## **SCENARIO COMMENTS**

(List any comments the players may have had about the scenario or how it may have been better.)

Strengths:

Weaknesses:

Comments:

Controller: \_\_\_\_\_ Date: \_\_\_\_\_

## **Mini scenario # 7**

### **Failure of Vehicle Barrier at MAF**

#### **PURPOSE/GOAL**

The purpose of this mini-scenario is to assess the ability of the Security Force and Operations Support Personnel to a relatively minor situation with respect to plant safety, but very large concern for the owners of the vehicle attempting to leave the PA

#### **PRECAUTIONS AND EXTENT OF PLAY**

1. Do not allow any plant equipment to be operated if it may impact plant operation.
2. Any protective clothing or equipment necessary for the job should be used and not simulated.
3. VBA is not to be disabled in any manner. All actions should be demonstrated in a real time type of situation.

#### **NARRATIVE SUMMARY**

Shortly (about 0935) after the assembly (simulated actions) and accountability had been called for, any contractors that had vehicles inside the PA would have them assembled at the main vehicle gate and wanting them cleared out of the area. If the Vehicle Barrier Assembly (VBA) is not functioning, the alternative method of exiting the PA with vehicle needs to be implemented or the VBA over-ridden in some manner.

Vehicles may be taken out of the PA using an alternative gate, but that area is at risk if a release were to occur. The hydraulic ram for the VBA can easily be defeated and the VBA operated either by brute force or by the use of some lifting device (Grove Crane).

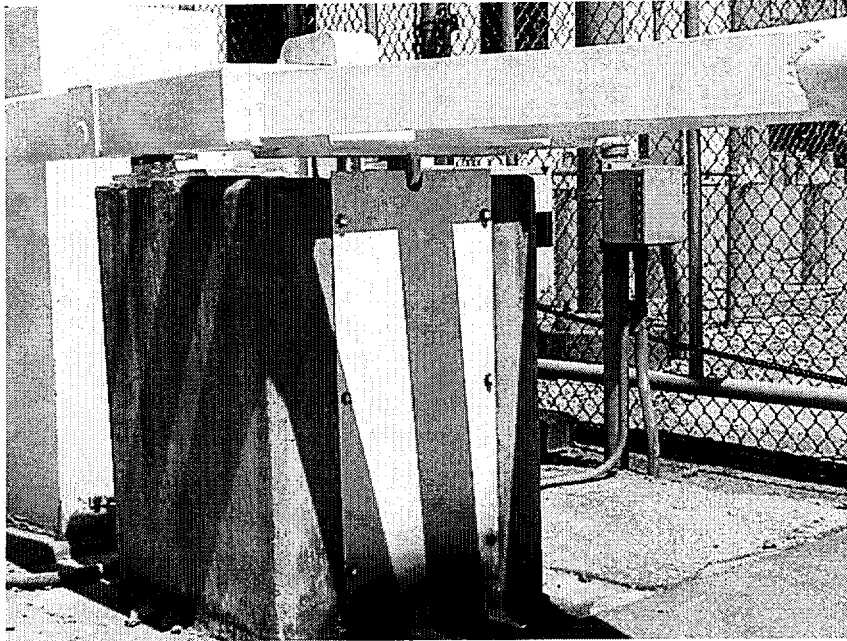
The fix will amount to removal of 6 nuts that hold the access plate in place, removal of the cotter key, and taking the link pin out of the ram. The gate is counter-weighted and could probably be lifted manually until it could be secured in the upright position.

#### **TOOLS, PARTS, SPECIAL EQUIPMENT, AND DOCUMENTS**

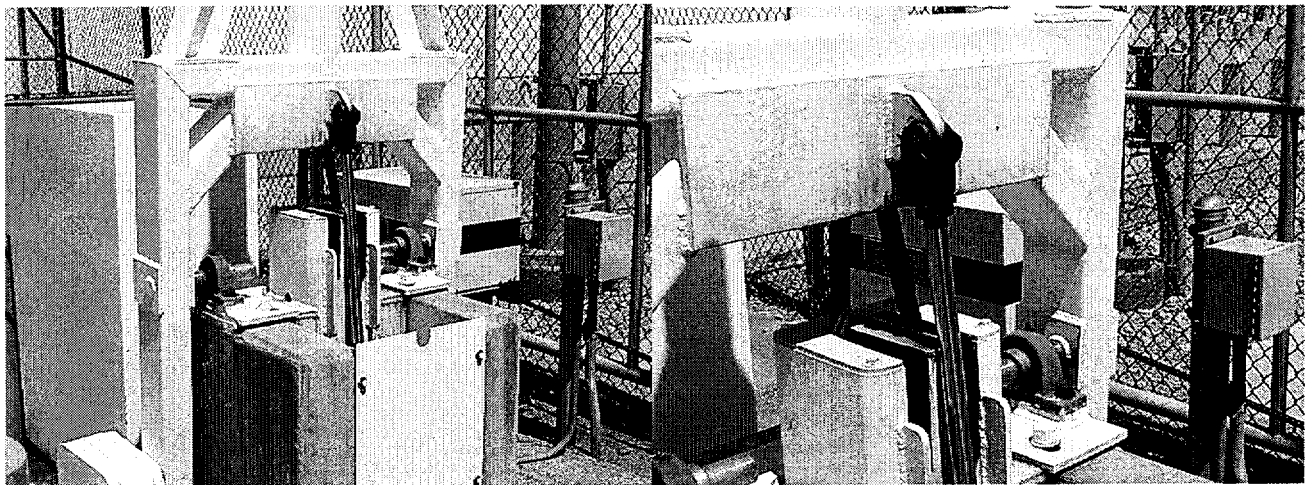
No special tools or parts. All tools would be expected to be part of the typical tool bags assembly.

#### **INDICATIONS AND INFORMATION**

The pictures below are of the VBA. It is preferred that the team go to the VBA, but in the event of adverse weather, etc., the team may be taken to a location away from the OSA and their actions discussed.



VBA showing the 6 nuts to be removed



Cotter key and pin to be removed

### **OBSERVATION POINTS**

1. Was any sense of urgency expressed to the team as they were being formed and briefed?
2. Was the briefing of sufficient scope to allow the job to be performed, but yet not so detailed to prevent the team from responding in a timely manner? (Simple job lost in excessive details?)



3. Did the team arrive at the same of a better fix for this problem? If so please elaborate.

4. In your evaluation, was the response of the team appropriate?

### **SCENARIO COMMENTS**

(List any comments the players may have had about the scenario or how it may have been better.)

Strengths:

Weaknesses:

Comments:

Controller: \_\_\_\_\_ Date: \_\_\_\_\_

### SCENARIO MESSAGE

Initiated by: MAF Controller Location: MAF/CAS Message No. 8  
Delivered to: SSS Location: MAF Scenario Time: 0935  
Phone No. Radio/68701

Refer to Mini-scenario # 7, Failure of VBA.

### THIS IS A DRILL

We got a problem out here. We've got some contractors that need to get their vehicles out of the PA and the VBA won't raise. We've got them through the turnstiles and accounted for, but we can't get their vehicles out. They can't leave without them and I don't want them blocking the driveway. What do you want to do?

### THIS IS A DRILL

## **Mini scenario # 8**

### **Loss of Switchyard Breaker 52-3**

#### **PURPOSE/GOAL**

The purpose of this mini-scenario is to cause a loss of NB01 from the opening of switchyard breaker 52-3. This loss will cause the "A" diesel generator to start and load up the bus. The loads on the bus will load correctly with the exception of the "A" SI pump, which is still damaged from Mini-Scenario # 2.

#### **PRECAUTIONS AND EXTENT OF PLAY**

1. Do not allow any plant equipment to be operated if it may impact plant operation.
2. Any protective clothing or equipment necessary for the job should be used and not simulated.
3. Breaker cubicles should not be opened or operated in any manner.

#### **NARRATIVE SUMMARY**

Switchyard breaker 52-3 opens for unknown reasons. Attempts to re-close the breaker from the Control Room will not be successful. The Outside EO is dispatched to investigate. When he gets into the switchyard and begins to approach the building when the breaker is, he notices a "smell", that the door is ajar, and that a "family of skunks is occupying and defending the house. He will not be able to enter due to the possibility that the skunk(s) may be rabid in his opinion and the personal risk for another. The "A" diesel generator will start and supply the safety-related loads off NB01. The "A" SI pump fails to start because it was damaged in a previous mini-scenario.

If an operator is sent to the switchgear to investigate, he will refuse to enter the area due to the skunk smell and seeing a strangely behaving animal in the switchgear building. The skunks are defensive of the building as well as inhabiting it.

If the operator or repair team does gain entry to the breaker, it will indicate that it has higher than normal internal pressure (indication of an internal fault of some nature). Entry should not be allowed until some action is taken to remove the skunks.

If an operator is sent to the Diesel, all is running as expected. No problems are found.

#### **TOOLS, PARTS, SPECIAL EQUIPMENT, AND DOCUMENTS**

No special equipment is needed for this scenario.  
Animal Control to remove the skunks.

#### **INDICATIONS AND INFORMATION**

NB01 is being supplied from the "A" diesel and has no problems. The "A" SI pump did not start due to being damaged earlier in this scenario.

Breaker 52-3 opened due to unknown reason and inspection restricted due to a family of skunks in the switchgear. There is a family of skunks in the switchyard and from their actions, they appear to be possessive of the building and possibly rabid. The breaker will not re-close due to heavy grease on the trip mechanism even if someone braves the skunk family to attempt manual closure.

If the operator or repair team does gain entry to the breaker, it will indicate that it has higher than normal internal pressure (indication of an internal fault of some nature). Entry should not be allowed until some action is taken to remove the skunks.

### **OBSERVATION POINTS**

The crew should verify that the diesel is running properly and supplying the loads off NB01.

What are the actions taken by the operating crew when the EO reports back that he will not approach the switchgear?

## **SCENARIO COMMENTS**

(List any comments the players may have had about the scenario or how it may have been better.)

Strengths:

Weaknesses:

Comments:

## **Mini scenario # 10**

### **Small Explosion and Damage to Ventilation Duct**

#### **PURPOSE/GOAL**

**The purpose of this mini-scenario is to create the release pathway to the environment and to challenge the Operations Support Personnel to perform repair actions in high dose areas. It is anticipated that KI and dose extensions will need to be considered as a minimum.**

#### **PRECAUTIONS AND EXTENT OF PLAY**

2. Do not allow any plant equipment to be operated if it may impact plant operation.
3. Any protective clothing or equipment necessary for the job should be used and not simulated. The controller may determine that the donning of protective clothing and/or respiratory protective devices for the simulated work in the RCA may be omitted if it is identified, is readily available and the responders appear knowledgeable in its use in his opinion.
4. Scaffolding to access the area will not need to be build, but the materials need to be identified, time allowed to move into place and build any work platform that would be needed.
5. Patching materials will not be to be procured and taken to the scene, but again time associated with the procurement and movement into place should be discussed and detailed to the controller.

#### **NARRATIVE SUMMARY**

At 1010 Fire Protection Panel, KC008 in the Control Room will alarm. (KC 008 is not functional in the Simulator and this will be a Controller Inject to the CRS.) There will be indication that a detector the area 1507 has alarmed. This will be due to a small, localized explosion in this area causing that hydrogen analyzer to be inoperable. The explosion is due to a leaking bottle on the Hydrogen Analyzer on the 2047' level beside the CPH (Room 1507). The bottle was recently replaced and has had a leak in the threaded connection. A spark from either the Hydrogen analyzer or the heat tracing on the sample lines causes the ignition. The resulting explosion causes the valve head and assembly to be ejected and it penetrates the Containment Ventilation Piping upstream of the isolation dampers outside Containment. This causes the Containment to be breached and the release to be initiated. All previous efforts to get GT HZ-0011, the failed damper inside Containment, have not been successful.

If the EO is sent to inspect the area after the alarm, he should either be called back if possible or be lost for the next 30 to 45 minutes since he will be "gassed out from the noble gasses in the break area and should be slightly contaminated. He may be allowed to make that initial report that there is not fire in the area, but the ARMs are alarming. He will not be able to make any report on the extent of the damage.

Inspection teams should be able to enter the area from the Fuel Building side and access the area of the break. This access route should result in a lower dose en-route to the area. Once in the area, they will observe that the damage (see accompanying picture) is on the lower side of the piping and the edges of the damaged area are inward. A ladder may be obtained to inspect the area more closely. The flow of gases is such that the area may be accessed without difficulty however, the dose rates are several R/hr and time in the area should be limited. The pressure is only a few psi.

A possible repair or patch would be to place a soft, flexible gasket type material in the area of the penetration and then hold it in place with plywood or sheet metal and banding material. Since the plant is cooling down the pressure will continue to decrease so it only has to hold a few pounds pressure.

Dose extensions and KI should be considered and will appropriate procedure for each followed.

### **TOOLS, PARTS, SPECIAL EQUIPMENT, AND DOCUMENTS**

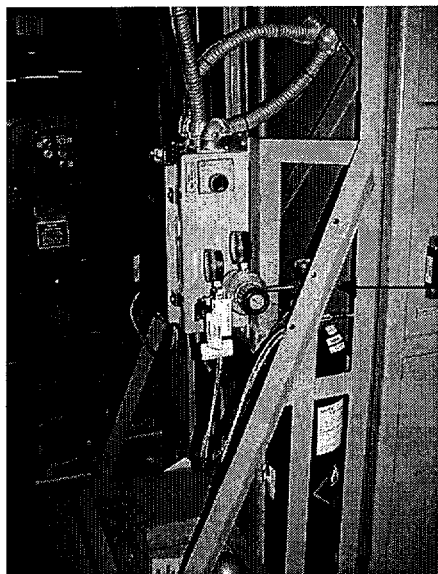
Scaffold materials are in the area.

Plywood or sheet metal would have to be located and taken to the area (should be simulated)

Patching material (gasket material, rubber sheeting., neoprene, etc.)

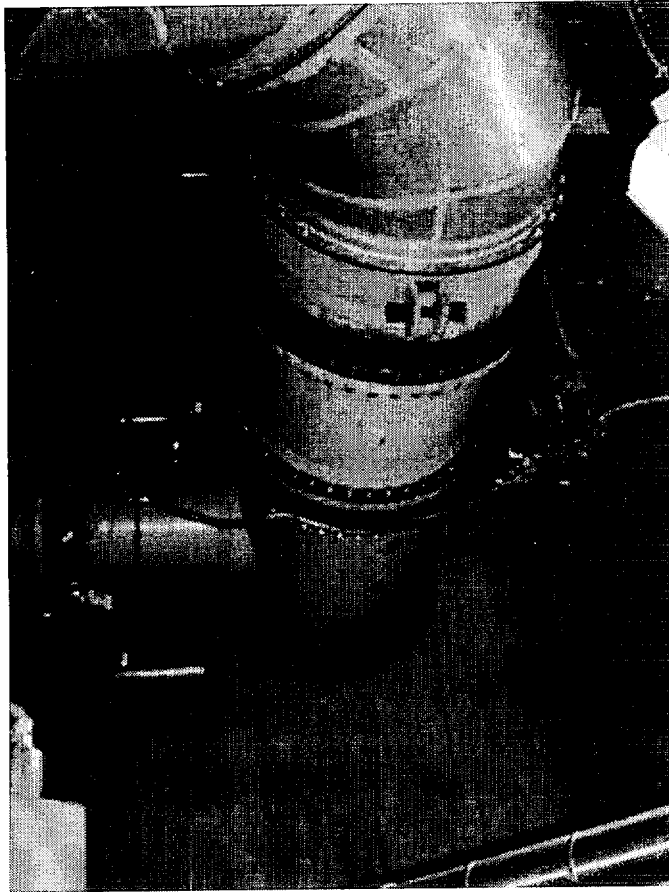
Banding material, if not available in tool room, should be available from Maintenance.

### **INDICATIONS AND INFORMATION**



Hydrogen analyzer and damaged bottle

Valve assembly was the projectile.



Area of damage to duct work. Damage is from the outside so the edges are folded inward. The damage runs with the axis of the duct.

### **OBSERVATION POINTS**

1. Was an initial inspection team dispatched?
2. If so, was access for them expedited? Was their briefing kept to a minimum to allow them to get in and out quickly?
3. Were dose extension considered/used for the repair team? Was the proper procedure used? Were volunteers requested?
4. Were the briefings overly detailed and restrictive to the team so that work was delayed in your opinion? How could they have been better?
5. Was input (suggestions) on repair possibilities solicited from the team members?



6. Was the repair plan reasonable and workable?

### **SCENARIO COMMENTS**

(List any comments the players may have had about the scenario or how it may have been better.)

Strengths:

Weaknesses:

Comments:

Controller: \_\_\_\_\_ Date: \_\_\_\_\_

## HP and FMT Controllers

When releasing data to Field Monitoring Teams or providing data from radiological survey maps, take note of the following items and provide the corresponding information:

- What instrument(s) is(are) being used?
- Is it turned on
- What scale is it on

The information you release should be adjusted to be valid for the instrument(s) being used. Air sample results should be rounded up or down and 100 cpm is the minimum detectable limit.

The following is provided for your information.

### LU DLUM MODEL 14C

#### PRECAUTIONS AND LIMITATIONS

- THE MODEL 14C MAY NOT BE USED TO QUANTIFY BETA DOSE RATES. USE THE APPROPRIATE ION CHAMBER INSTRUMENT TO ESTABLISH BETA DOSE RATES.
- THE X1000 RANGE UTILIZES AN INTERNAL DETECTOR.
- THE BATTERIES SHOULD BE REMOVED FROM THE INSTRUMENT ANYTIME IT IS NOT GOING TO BE USED FOR A LONG PERIOD OF TIME.

#### OPERATING CHARACTERISTICS

- THE MODEL 14C IS A PORTABLE SURVEY INSTRUMENT USED FOR THE MEASUREMENT OF GAMMA EXPOSURE RATES AND THE DETECTION OF BETA RADIATION. THE 14C HAS RANGES OF 0-2 MR/HR, 0-2 MR/HR, 0-20 MR/HR, 0-200 MR/HR, AND 0-2000 MR/HR.
- THIS INSTRUMENT IS TYPICALLY USED FOR GENERAL AREA LOW LEVEL RADIATION SURVEYS USING A HAND HELD SIDE WINDOW GM DETECTOR FOR THE 4 LOWEST RANGES AND AN INTERNAL GM DETECTOR FOR THE HIGHEST RANGE.
- THERE IS A BETA SHIELD ON THE SIDE-WINDOW GM DETECTOR TO BE USED FOR BETA DETECTION. THE INTERNAL DETECTOR MEASURES GAMMA EXPOSURE ONLY.

### LU DLUM MODEL RO-2(X)

#### OPERATING CHARACTERISTICS

- THE RO-2(X) SERIES ARE PORTABLE ION CHAMBER INSTRUMENTS USED TO DETECT BETA AND GAMMA RADIATION.
- THE RO-2 HAS 4 DECADE RANGES WITH A MAXIMUM OF 5 R/HR.
- THE RO-2A HAS 4 DECADE RANGES WITH A MAXIMUM OF 50 R/HR.
- THE RO-20 HAS 5 DECADE RANGES WITH A MAXIMUM OF 50 R/HR.

Operational Support  
Data

Chemistry

# Chemistry Data

Sample Date: 20011003

Sample Time: 2:00 hrs.

Analysis 2:20 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment Atmosphere	Aux Building Unit Vent GT	Isotope
			GT RE 31/32 conc. (uci/cc)	RE-21B R. Rate. (uci/sec)	
Kr 85	1.44E-03	#	1.64E-07	4.13E-03	Kr 85
Kr 85m	6.21E-02	#	7.10E-06	1.78E-01	Kr 85m
Kr 87	1.22E-01		1.39E-05	3.49E-01	Kr 87
Kr 88	1.76E-01		2.01E-05	5.06E-01	Kr 88
Sr 89	7.69E-03		8.79E-07	2.21E-02	Sr 89
Sr 90	3.03E-04		3.46E-08	8.70E-04	Sr 90
Sr 91	9.00E-03		1.03E-06	2.58E-02	Sr 91
Zr 95	3.27E-03		3.74E-07	9.38E-03	Zr 95
Zr 97	3.27E-03		3.74E-07	9.38E-03	Zr 97
Nb 95	3.27E-03		3.74E-07	9.38E-03	Nb 95
Mo 99	3.49E-03		3.98E-07	1.00E-02	Mo 99
Ru 103	2.40E-03		2.74E-07	6.88E-03	Ru 103
Ru 106	5.45E-04		6.23E-08	1.56E-03	Ru 106
I 131	1.52E-01		9.26E-06	2.33E-01	I 131
I 132	1.85E-01		1.31E-05	3.28E-01	I 132
I 133	2.62E-01		1.85E-05	4.65E-01	I 133
I 134	2.97E-01		2.07E-05	5.20E-01	I 134
I 135	2.26E-01		1.63E-05	4.10E-01	I 135
Xe 131m	2.59E-03		2.96E-07	7.45E-03	Xe 131m
Xe 133	4.40E-01		5.03E-05	1.26E+00	Xe 133
Xe 133m	1.55E-02		1.78E-06	4.46E-02	Xe 133m
Xe 135	8.80E-02		1.01E-05	2.53E-01	Xe 135
Xe 138	4.40E-01		5.03E-05	1.26E+00	Xe 138
Cs 134	5.10E-03		5.83E-07	1.46E-02	Cs 134
Cs 136	2.04E-03		2.34E-07	5.87E-03	Cs 136
Cs 137	3.20E-03		3.66E-07	9.20E-03	Cs 137
Ba 140	1.74E-02		1.99E-06	5.01E-02	Ba 140
La 140	3.49E-03		3.98E-07	1.00E-02	La 140
Ce 141	4.10E-03		4.68E-07	1.18E-02	Ce 141
Ce 144	2.31E-03		2.64E-07	6.63E-03	Ce 144

Total Act. 2.10E+00 uci/gm 2.40E-04 uci/cc 6.03E+00 uci/sec

DEI 2.53E-01 uci/gm

Boron Conc. 1060 ppm

# Chemistry Data

Sample Date: 20011003

Sample Time: 7:45 hrs.

Analysis 8:05 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment Atmosphere GT RE 31/32	Aux Building Unit Vent GT RE-21B	Isotope
			conc. (uci/cc)	R. Rate. (uci/sec)	
Kr 85	1.55E-03	#	2.94E-07	4.14E-03	Kr 85
Kr 85m	6.71E-02	#	1.27E-05	1.79E-01	Kr 85m
Kr 87	1.31E-01		2.49E-05	3.50E-01	Kr 87
Kr 88	1.90E-01		3.60E-05	5.07E-01	Kr 88
Sr 89	8.31E-03		1.57E-06	2.22E-02	Sr 89
Sr 90	3.27E-04		6.20E-08	8.73E-04	Sr 90
Sr 91	9.73E-03		1.84E-06	2.59E-02	Sr 91
Zr 95	3.53E-03		6.69E-07	9.42E-03	Zr 95
Zr 97	3.53E-03		6.69E-07	9.42E-03	Zr 97
Nb 95	3.53E-03		6.69E-07	9.42E-03	Nb 95
Mo 99	3.77E-03		7.14E-07	1.00E-02	Mo 99
Ru 103	2.59E-03		4.91E-07	6.90E-03	Ru 103
Ru 106	5.89E-04		1.12E-07	1.57E-03	Ru 106
I 131	8.76E-02		1.66E-05	2.34E-01	I 131
I 132	1.24E-01		2.34E-05	3.30E-01	I 132
I 133	1.75E-01		3.32E-05	4.67E-01	I 133
I 134	1.96E-01		3.71E-05	5.22E-01	I 134
I 135	1.55E-01		2.93E-05	4.12E-01	I 135
Xe 131m	2.80E-03		5.31E-07	7.47E-03	Xe 131m
Xe 133	4.76E-01		9.01E-05	1.27E+00	Xe 133
Xe 133m	1.68E-02		3.18E-06	4.48E-02	Xe 133m
Xe 135	9.52E-02		1.80E-05	2.54E-01	Xe 135
Xe 138	4.76E-01		9.01E-05	1.27E+00	Xe 138
Cs 134	5.51E-03		1.04E-06	1.47E-02	Cs 134
Cs 136	2.21E-03		4.18E-07	5.89E-03	Cs 136
Cs 137	3.46E-03		6.56E-07	9.23E-03	Cs 137
Ba 140	1.88E-02		3.57E-06	5.02E-02	Ba 140
La 140	3.77E-03		7.14E-07	1.00E-02	La 140
Ce 141	4.43E-03		8.39E-07	1.18E-02	Ce 141
Ce 144	2.50E-03		4.73E-07	6.65E-03	Ce 144

Total Act. 2.27E+00 uci/gm 4.30E-04 uci/cc 6.05E+00 uci/sec

DEI 1.56E-01 uci/gm

Boron Conc. 1060 ppm

# Chemistry Data

Sample Date: 20011003

Sample Time: 8:00 hrs.

Analysis 8:10 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment Atmosphere GT RE 31/32	Aux Building Unit Vent GT RE-21B	Isotope
			conc. (uci/cc)	R. Rate. (uci/sec)	
Kr 85	8.22E-01	#	5.48E-05	4.16E-03	Kr 85
Kr 85m	3.55E+01	#	2.37E-03	1.80E-01	Kr 85m
Kr 87	6.95E+01		4.63E-03	3.52E-01	Kr 87
Kr 88	1.01E+02		6.71E-03	5.10E-01	Kr 88
Sr 89	4.40E+00		2.93E-04	2.23E-02	Sr 89
Sr 90	1.73E-01		1.15E-05	8.77E-04	Sr 90
Sr 91	5.14E+00		3.43E-04	2.61E-02	Sr 91
Zr 95	1.87E+00		1.25E-04	9.46E-03	Zr 95
Zr 97	1.87E+00		1.25E-04	9.46E-03	Zr 97
Nb 95	1.87E+00		1.25E-04	9.46E-03	Nb 95
Mo 99	1.99E+00		1.33E-04	1.01E-02	Mo 99
Ru 103	1.37E+00		9.13E-05	6.94E-03	Ru 103
Ru 106	3.11E-01		2.08E-05	1.58E-03	Ru 106
I 131	4.63E+01		3.09E-03	2.35E-01	I 131
I 132	6.54E+01		4.36E-03	3.31E-01	I 132
I 133	9.26E+01		6.18E-03	4.69E-01	I 133
I 134	1.03E+02		6.90E-03	5.24E-01	I 134
I 135	8.17E+01		5.45E-03	4.14E-01	I 135
Xe 131m	1.48E+00		9.88E-05	7.51E-03	Xe 131m
Xe 133	2.52E+02		1.68E-02	1.27E+00	Xe 133
Xe 133m	8.88E+00		5.92E-04	4.50E-02	Xe 133m
Xe 135	5.03E+01		3.35E-03	2.55E-01	Xe 135
Xe 138	2.52E+02		1.68E-02	1.27E+00	Xe 138
Cs 134	2.91E+00		1.94E-04	1.48E-02	Cs 134
Cs 136	1.17E+00		7.79E-05	5.92E-03	Cs 136
Cs 137	1.83E+00		1.22E-04	9.27E-03	Cs 137
Ba 140	9.96E+00		6.64E-04	5.05E-02	Ba 140
La 140	1.99E+00		1.33E-04	1.01E-02	La 140
Ce 141	2.34E+00		1.56E-04	1.19E-02	Ce 141
Ce 144	1.32E+00		8.80E-05	6.69E-03	Ce 144

Total Act. 1.20E+03 uci/gm 8.00E-02 uci/cc 6.08E+00 uci/sec

DEI 8.23E+01 uci/gm

Boron Conc. 1070 ppm

# Chemistry Data

Sample Date: 20011003

Sample Time: 8:15 hrs.

Analysis 8:25 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment Atmosphere	Aux Building Unit Vent GT	Isotope
			GT RE 31/32 conc. (uci/cc)	RE-21B R. Rate. (uci/sec)	
Kr 85	1.64E+00	#	8.22E-05	4.13E-03	Kr 85
Kr 85m	7.10E+01	#	3.55E-03	1.78E-01	Kr 85m
Kr 87	1.39E+02		6.95E-03	3.49E-01	Kr 87
Kr 88	2.01E+02		1.01E-02	5.06E-01	Kr 88
Sr 89	8.79E+00		4.40E-04	2.21E-02	Sr 89
Sr 90	3.46E-01		1.73E-05	8.70E-04	Sr 90
Sr 91	1.03E+01		5.14E-04	2.58E-02	Sr 91
Zr 95	3.74E+00		1.87E-04	9.38E-03	Zr 95
Zr 97	3.74E+00		1.87E-04	9.38E-03	Zr 97
Nb 95	3.74E+00		1.87E-04	9.38E-03	Nb 95
Mo 99	3.98E+00		1.99E-04	1.00E-02	Mo 99
Ru 103	2.74E+00		1.37E-04	6.88E-03	Ru 103
Ru 106	6.23E-01		3.11E-05	1.56E-03	Ru 106
I 131	9.26E+01		4.63E-03	2.33E-01	I 131
I 132	1.31E+02		6.54E-03	3.28E-01	I 132
I 133	1.85E+02		9.26E-03	4.65E-01	I 133
I 134	2.07E+02		1.03E-02	5.20E-01	I 134
I 135	1.63E+02		8.17E-03	4.10E-01	I 135
Xe 131m	2.96E+00		1.48E-04	7.45E-03	Xe 131m
Xe 133	5.03E+02		2.52E-02	1.26E+00	Xe 133
Xe 133m	1.78E+01		8.88E-04	4.46E-02	Xe 133m
Xe 135	1.01E+02		5.03E-03	2.53E-01	Xe 135
Xe 138	5.03E+02		2.52E-02	1.26E+00	Xe 138
Cs 134	5.83E+00		2.91E-04	1.46E-02	Cs 134
Cs 136	2.34E+00		1.17E-04	5.87E-03	Cs 136
Cs 137	3.66E+00		1.83E-04	9.20E-03	Cs 137
Ba 140	1.99E+01		9.96E-04	5.01E-02	Ba 140
La 140	3.98E+00		1.99E-04	1.00E-02	La 140
Ce 141	4.68E+00		2.34E-04	1.18E-02	Ce 141
Ce 144	2.64E+00		1.32E-04	6.63E-03	Ce 144

Total Act. 2.40E+03 uci/cc 1.20E-01 uci/cc 6.03E+00 uci/sec

DEI 1.65E+02 uci/cc

Boron Conc. 1075 ppm



# Chemistry Data

Sample Date: 20011003

Sample Time: 8:30 hrs.

Analysis 8:40 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment	Aux Building	Isotope
			Atmosphere GT RE 31/32 conc. (uci/cc)	Unit Vent GT RE-21B R. Rate. (uci/sec)	
Kr 85	2.47E+00	#	5.14E-04	4.16E-03	Kr 85
Kr 85m	1.06E+02	#	2.22E-02	1.79E-01	Kr 85m
Kr 87	2.08E+02		4.34E-02	3.51E-01	Kr 87
Kr 88	3.02E+02		6.29E-02	5.09E-01	Kr 88
Sr 89	1.32E+01		2.75E-03	2.22E-02	Sr 89
Sr 90	5.19E-01		1.08E-04	8.75E-04	Sr 90
Sr 91	1.54E+01		3.21E-03	2.60E-02	Sr 91
Zr 95	5.60E+00		1.17E-03	9.45E-03	Zr 95
Zr 97	5.60E+00		1.17E-03	9.45E-03	Zr 97
Nb 95	5.60E+00		1.17E-03	9.45E-03	Nb 95
Mo 99	5.98E+00		1.25E-03	1.01E-02	Mo 99
Ru 103	4.11E+00		8.56E-04	6.93E-03	Ru 103
Ru 106	9.34E-01		1.95E-04	1.57E-03	Ru 106
I 131	1.39E+02		2.89E-02	2.34E-01	I 131
I 132	1.96E+02		4.09E-02	3.31E-01	I 132
I 133	2.78E+02		5.79E-02	4.69E-01	I 133
I 134	3.10E+02		6.47E-02	5.23E-01	I 134
I 135	2.45E+02		5.10E-02	4.13E-01	I 135
Xe 131m	4.44E+00		9.26E-04	7.49E-03	Xe 131m
Xe 133	7.55E+02		1.57E-01	1.27E+00	Xe 133
Xe 133m	2.66E+01		5.55E-03	4.49E-02	Xe 133m
Xe 135	1.51E+02		3.14E-02	2.54E-01	Xe 135
Xe 138	7.55E+02		1.57E-01	1.27E+00	Xe 138
Cs 134	8.74E+00		1.82E-03	1.47E-02	Cs 134
Cs 136	3.50E+00		7.30E-04	5.91E-03	Cs 136
Cs 137	5.49E+00		1.14E-03	9.26E-03	Cs 137
Ba 140	2.99E+01		6.23E-03	5.04E-02	Ba 140
La 140	5.98E+00		1.25E-03	1.01E-02	La 140
Ce 141	7.02E+00		1.46E-03	1.18E-02	Ce 141
Ce 144	3.96E+00		8.25E-04	6.68E-03	Ce 144

Total Act. 3.60E+03 uci/cc 7.50E-01 uci/cc 6.07E+00 uci/sec

DEI 2.47E+02 uci/cc

Boron Conc. 1080 ppm

# Chemistry Data

Sample Date: 20011003

Sample Time: 8:45 hrs.

Analysis 8:55 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment	Aux Building	Isotope
			Atmosphere GT RE 31/32 conc. (uci/cc)	Unit Vent GT RE-21B R. Rate. (uci/sec)	
Kr 85	3.22E+00	#	8.22E-04	4.14E-03	Kr 85
Kr 85m	1.39E+02	#	3.55E-02	1.79E-01	Kr 85m
Kr 87	2.72E+02		6.95E-02	3.50E-01	Kr 87
Kr 88	3.94E+02		1.01E-01	5.06E-01	Kr 88
Sr 89	1.72E+01		4.40E-03	2.21E-02	Sr 89
Sr 90	6.78E-01		1.73E-04	8.71E-04	Sr 90
Sr 91	2.01E+01		5.14E-03	2.59E-02	Sr 91
Zr 95	7.31E+00		1.87E-03	9.40E-03	Zr 95
Zr 97	7.31E+00		1.87E-03	9.40E-03	Zr 97
Nb 95	7.31E+00		1.87E-03	9.40E-03	Nb 95
Mo 99	7.80E+00		1.99E-03	1.00E-02	Mo 99
Ru 103	5.36E+00		1.37E-03	6.89E-03	Ru 103
Ru 106	1.22E+00		3.11E-04	1.57E-03	Ru 106
I 131	1.81E+02		4.63E-02	2.33E-01	I 131
I 132	2.56E+02		6.54E-02	3.29E-01	I 132
I 133	3.63E+02		9.26E-02	4.66E-01	I 133
I 134	4.05E+02		1.03E-01	5.21E-01	I 134
I 135	3.20E+02		8.17E-02	4.11E-01	I 135
Xe 131m	5.80E+00		1.48E-03	7.46E-03	Xe 131m
Xe 133	9.85E+02		2.52E-01	1.27E+00	Xe 133
Xe 133m	3.48E+01		8.88E-03	4.47E-02	Xe 133m
Xe 135	1.97E+02		5.03E-02	2.53E-01	Xe 135
Xe 138	9.85E+02		2.52E-01	1.27E+00	Xe 138
Cs 134	1.14E+01		2.91E-03	1.47E-02	Cs 134
Cs 136	4.57E+00		1.17E-03	5.88E-03	Cs 136
Cs 137	7.17E+00		1.83E-03	9.21E-03	Cs 137
Ba 140	3.90E+01		9.96E-03	5.01E-02	Ba 140
La 140	7.80E+00		1.99E-03	1.00E-02	La 140
Ce 141	9.17E+00		2.34E-03	1.18E-02	Ce 141
Ce 144	5.17E+00		1.32E-03	6.64E-03	Ce 144

Total Act. 4.70E+03 uci/cc 1.20E+00 uci/cc 6.04E+00 uci/sec

DEI 3.22E+02 uci/cc

Boron Conc. 1105 ppm

# Chemistry Data

Sample Date: 20011003

Sample Time: 9:00 hrs.

Analysis 9:10 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment Atmosphere	Aux Building Unit Vent GT	Isotope
			GT RE 31/32 conc. (uci/cc)	RE-21B R. Rate. (uci/sec)	
Kr 85	3.25E+00	#	1.44E-03	4.13E-03	Kr 85
Kr 85m	1.40E+02	#	6.21E-02	1.78E-01	Kr 85m
Kr 87	2.75E+02		1.22E-01	3.49E-01	Kr 87
Kr 88	3.98E+02		1.76E-01	5.06E-01	Kr 88
Sr 89	1.74E+01		7.69E-03	2.21E-02	Sr 89
Sr 90	6.85E-01		3.03E-04	8.70E-04	Sr 90
Sr 91	2.04E+01		9.00E-03	2.58E-02	Sr 91
Zr 95	7.39E+00		3.27E-03	9.38E-03	Zr 95
Zr 97	7.39E+00		3.27E-03	9.38E-03	Zr 97
Nb 95	7.39E+00		3.27E-03	9.38E-03	Nb 95
Mo 99	7.89E+00		3.49E-03	1.00E-02	Mo 99
Ru 103	5.42E+00		2.40E-03	6.88E-03	Ru 103
Ru 106	1.23E+00		5.45E-04	1.56E-03	Ru 106
I 131	1.83E+02		8.11E-02	2.33E-01	I 131
I 132	2.59E+02		1.14E-01	3.28E-01	I 132
I 133	3.67E+02		1.62E-01	4.65E-01	I 133
I 134	4.10E+02		1.81E-01	5.20E-01	I 134
I 135	3.23E+02		1.43E-01	4.10E-01	I 135
Xe 131m	5.86E+00		2.59E-03	7.45E-03	Xe 131m
Xe 133	9.96E+02		4.40E-01	1.26E+00	Xe 133
Xe 133m	3.51E+01		1.55E-02	4.46E-02	Xe 133m
Xe 135	1.99E+02		8.80E-02	2.53E-01	Xe 135
Xe 138	9.96E+02		4.40E-01	1.26E+00	Xe 138
Cs 134	1.15E+01		5.10E-03	1.46E-02	Cs 134
Cs 136	4.62E+00		2.04E-03	5.87E-03	Cs 136
Cs 137	7.24E+00		3.20E-03	9.20E-03	Cs 137
Ba 140	3.94E+01		1.74E-02	5.01E-02	Ba 140
La 140	7.89E+00		3.49E-03	1.00E-02	La 140
Ce 141	9.27E+00		4.10E-03	1.18E-02	Ce 141
Ce 144	5.22E+00		2.31E-03	6.63E-03	Ce 144

Total Act. 4.75E+03 uci/cc 2.10E+00 uci/cc 6.03E+00 uci/sec

DEI 3.26E+02 uci/cc

Boron Conc. 1110 ppm

# Chemistry Data

Sample Date: 20011003

Sample Time: 930 hrs.

Analysis 940 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment	Aux Building	Isotope
			Atmosphere GT RE 31/32 conc. (uci/cc)	Unit Vent GT RE-21B R. Rate. (uci/sec)	
Kr 85	3.27E+00	#	2.40E-03	4.13E-03	Kr 85
Kr 85m	1.41E+02	#	1.03E-01	1.78E-01	Kr 85m
Kr 87	2.76E+02		2.03E-01	3.49E-01	Kr 87
Kr 88	4.00E+02		2.93E-01	5.06E-01	Kr 88
Sr 89	1.75E+01		1.28E-02	2.21E-02	Sr 89
Sr 90	6.89E-01		5.05E-04	8.70E-04	Sr 90
Sr 91	2.05E+01		1.50E-02	2.58E-02	Sr 91
Zr 95	7.43E+00		5.45E-03	9.38E-03	Zr 95
Zr 97	7.43E+00		5.45E-03	9.38E-03	Zr 97
Nb 95	7.43E+00		5.45E-03	9.38E-03	Nb 95
Mo 99	7.93E+00		5.81E-03	1.00E-02	Mo 99
Ru 103	5.45E+00		3.99E-03	6.88E-03	Ru 103
Ru 106	1.24E+00		9.08E-04	1.56E-03	Ru 106
I 131	1.84E+02		1.35E-01	2.33E-01	I 131
I 132	2.60E+02		1.91E-01	3.28E-01	I 132
I 133	3.69E+02		2.70E-01	4.65E-01	I 133
I 134	4.12E+02		3.02E-01	5.20E-01	I 134
I 135	3.25E+02		2.38E-01	4.10E-01	I 135
Xe 131m	5.90E+00		4.32E-03	7.45E-03	Xe 131m
Xe 133	1.00E+03		7.34E-01	1.26E+00	Xe 133
Xe 133m	3.53E+01		2.59E-02	4.46E-02	Xe 133m
Xe 135	2.00E+02		1.47E-01	2.53E-01	Xe 135
Xe 138	1.00E+03		7.34E-01	1.26E+00	Xe 138
Cs 134	1.16E+01		8.50E-03	1.46E-02	Cs 134
Cs 136	4.65E+00		3.41E-03	5.87E-03	Cs 136
Cs 137	7.28E+00		5.34E-03	9.20E-03	Cs 137
Ba 140	3.96E+01		2.91E-02	5.01E-02	Ba 140
La 140	7.93E+00		5.81E-03	1.00E-02	La 140
Ce 141	9.31E+00		6.83E-03	1.18E-02	Ce 141
Ce 144	5.25E+00		3.85E-03	6.63E-03	Ce 144

Total Act. 4.78E+03 uci/cc 3.50E+00 uci/cc 6.03E+00 uci/sec

DEI 3.27E+02 uci/cc

Boron Conc. 1120 ppm

# Chemistry Data

Sample Date: 20011003

Sample Time: 1000 hrs.

Analysis 1010 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment Atmosphere GT RE 31/32	Aux Building Unit Vent GT RE-21B	Isotope
			conc. (uci/cc)	R. Rate. (uci/sec)	
Kr 85	3.29E+00	#	5.14E-03	4.13E-03	Kr 85
Kr 85m	1.42E+02	#	2.22E-01	1.78E-01	Kr 85m
Kr 87	2.78E+02		4.34E-01	3.49E-01	Kr 87
Kr 88	4.02E+02		6.29E-01	5.06E-01	Kr 88
Sr 89	1.76E+01		2.75E-02	2.21E-02	Sr 89
Sr 90	6.92E-01		1.08E-03	8.70E-04	Sr 90
Sr 91	2.06E+01		3.21E-02	2.58E-02	Sr 91
Zr 95	7.47E+00		1.17E-02	9.38E-03	Zr 95
Zr 97	7.47E+00		1.17E-02	9.38E-03	Zr 97
Nb 95	7.47E+00		1.17E-02	9.38E-03	Nb 95
Mo 99	7.97E+00		1.25E-02	1.00E-02	Mo 99
Ru 103	5.48E+00		8.56E-03	6.88E-03	Ru 103
Ru 106	1.25E+00		1.95E-03	1.56E-03	Ru 106
I 131	1.85E+02		2.89E-01	2.33E-01	I 131
I 132	2.61E+02		4.09E-01	3.28E-01	I 132
I 133	3.71E+02		5.79E-01	4.65E-01	I 133
I 134	4.14E+02		6.47E-01	5.20E-01	I 134
I 135	3.27E+02		5.10E-01	4.10E-01	I 135
Xe 131m	5.93E+00		9.26E-03	7.45E-03	Xe 131m
Xe 133	1.01E+03		1.57E+00	1.26E+00	Xe 133
Xe 133m	3.55E+01		5.55E-02	4.46E-02	Xe 133m
Xe 135	2.01E+02		3.14E-01	2.53E-01	Xe 135
Xe 138	1.01E+03		1.57E+00	1.26E+00	Xe 138
Cs 134	1.17E+01		1.82E-02	1.46E-02	Cs 134
Cs 136	4.67E+00		7.30E-03	5.87E-03	Cs 136
Cs 137	7.32E+00		1.14E-02	9.20E-03	Cs 137
Ba 140	3.98E+01		6.23E-02	5.01E-02	Ba 140
La 140	7.97E+00		1.25E-02	1.00E-02	La 140
Ce 141	9.36E+00		1.46E-02	1.18E-02	Ce 141
Ce 144	5.28E+00		8.25E-03	6.63E-03	Ce 144

Total Act. 4.80E+03 uci/cc 7.50E+00 uci/cc 6.03E+00 uci/sec

DEI 3.29E+02 uci/cc

Boron Conc. 1125 ppm

# Chemistry Data

Sample Date: 20011003  
Sample Time: 1015 hrs.

Analysis 1025 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment Atmosphere GT RE 31/32	Aux Building Unit Vent GT RE-21B	Isotope
			conc. (uci/cc)	R. Rate. (uci/sec)	
Kr 85	3.29E+00	#	6.85E-03	5.14E+04	Kr 85
Kr 85m	1.42E+02	#	2.96E-01	2.22E+06	Kr 85m
Kr 87	2.78E+02		5.79E-01	4.34E+06	Kr 87
Kr 88	4.02E+02		8.38E-01	6.29E+06	Kr 88
Sr 89	1.76E+01		3.66E-02	2.75E+05	Sr 89
Sr 90	6.92E-01		1.44E-03	1.08E+04	Sr 90
Sr 91	2.06E+01		4.29E-02	3.21E+05	Sr 91
Zr 95	7.47E+00		1.56E-02	1.17E+05	Zr 95
Zr 97	7.47E+00		1.56E-02	1.17E+05	Zr 97
Nb 95	7.47E+00		1.56E-02	1.17E+05	Nb 95
Mo 99	7.97E+00		1.66E-02	1.25E+05	Mo 99
Ru 103	5.48E+00		1.14E-02	8.56E+04	Ru 103
Ru 106	1.25E+00		2.59E-03	1.95E+04	Ru 106
I 131	1.85E+02		3.86E-01	2.89E+06	I 131
I 132	2.61E+02		5.45E-01	4.09E+06	I 132
I 133	3.71E+02		7.72E-01	5.79E+06	I 133
I 134	4.14E+02		8.62E-01	6.47E+06	I 134
I 135	3.27E+02		6.81E-01	5.10E+06	I 135
Xe 131m	5.93E+00		1.23E-02	9.26E+04	Xe 131m
Xe 133	1.01E+03		2.10E+00	1.57E+07	Xe 133
Xe 133m	3.55E+01		7.40E-02	5.55E+05	Xe 133m
Xe 135	2.01E+02		4.19E-01	3.14E+06	Xe 135
Xe 138	1.01E+03		2.10E+00	1.57E+07	Xe 138
Cs 134	1.17E+01		2.43E-02	1.82E+05	Cs 134
Cs 136	4.67E+00		9.73E-03	7.30E+04	Cs 136
Cs 137	7.32E+00		1.53E-02	1.14E+05	Cs 137
Ba 140	3.98E+01		8.30E-02	6.23E+05	Ba 140
La 140	7.97E+00		1.66E-02	1.25E+05	La 140
Ce 141	9.36E+00		1.95E-02	1.46E+05	Ce 141
Ce 144	5.28E+00		1.10E-02	8.25E+04	Ce 144

Total Act. 4.80E+03 uci/cc 1.00E+01 uci/cc 7.50E+07 uci/sec

DEI 3.29E+02 uci/cc

Containment Breach initiated

Boron Conc. 1130 ppm

5 E6 cc/sec  
15 uci/cc

# Chemistry Data

Sample Date: 20011003

Sample Time: 1030 hrs.

Analysis 1040 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment	Aux Building	Isotope
			Atmosphere GT RE 31/32 conc. (uci/cc)	Unit Vent GT RE-21B R. Rate. (uci/sec)	
Kr 85	3.29E+00	#	1.03E-02	2.05E+05	Kr 85
Kr 85m	1.42E+02	#	4.44E-01	8.87E+06	Kr 85m
Kr 87	2.78E+02		8.68E-01	1.74E+07	Kr 87
Kr 88	4.02E+02		1.26E+00	2.52E+07	Kr 88
Sr 89	1.76E+01		5.49E-02	1.10E+06	Sr 89
Sr 90	6.92E-01		2.16E-03	4.33E+04	Sr 90
Sr 91	2.06E+01		6.43E-02	1.29E+06	Sr 91
Zr 95	7.47E+00		2.33E-02	4.67E+05	Zr 95
Zr 97	7.47E+00		2.33E-02	4.67E+05	Zr 97
Nb 95	7.47E+00		2.33E-02	4.67E+05	Nb 95
Mo 99	7.97E+00		2.49E-02	4.98E+05	Mo 99
Ru 103	5.48E+00		1.71E-02	3.42E+05	Ru 103
Ru 106	1.25E+00		3.89E-03	7.78E+04	Ru 106
I 131	1.85E+02		5.79E-01	1.16E+07	I 131
I 132	2.61E+02		8.17E-01	1.63E+07	I 132
I 133	3.71E+02		1.16E+00	2.32E+07	I 133
I 134	4.14E+02		1.29E+00	2.59E+07	I 134
I 135	3.27E+02		1.02E+00	2.04E+07	I 135
Xe 131m	5.93E+00		1.85E-02	3.70E+05	Xe 131m
Xe 133	1.01E+03		3.14E+00	6.29E+07	Xe 133
Xe 133m	3.55E+01		1.11E-01	2.22E+06	Xe 133m
Xe 135	2.01E+02		6.29E-01	1.26E+07	Xe 135
Xe 138	1.01E+03		3.14E+00	6.29E+07	Xe 138
Cs 134	1.17E+01		3.64E-02	7.28E+05	Cs 134
Cs 136	4.67E+00		1.46E-02	2.92E+05	Cs 136
Cs 137	7.32E+00		2.29E-02	4.58E+05	Cs 137
Ba 140	3.98E+01		1.25E-01	2.49E+06	Ba 140
La 140	7.97E+00		2.49E-02	4.98E+05	La 140
Ce 141	9.36E+00		2.93E-02	5.85E+05	Ce 141
Ce 144	5.28E+00		1.65E-02	3.30E+05	Ce 144

Total Act. 4.80E+03 uci/cc 1.50E+01 uci/cc 3.00E+08 uci/sec

DEI 3.29E+02 uci/cc

Boron Conc. 1140 ppm

5 E6 cc/sec  
60 uci/cc

# Chemistry Data

Sample Date: 20011003

Sample Time: 1045 hrs.

Analysis 1055 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment Atmosphere GT RE 31/32	Aux Building Unit Vent GT RE-21B	Isotope
			conc. (uci/cc)	R. Rate. (uci/sec)	
Kr 85	3.29E+00	#	1.37E-02	3.08E+05	Kr 85
Kr 85m	1.42E+02	#	5.91E-01	1.33E+07	Kr 85m
Kr 87	2.78E+02		1.16E+00	2.61E+07	Kr 87
Kr 88	4.02E+02		1.68E+00	3.77E+07	Kr 88
Sr 89	1.76E+01		7.33E-02	1.65E+06	Sr 89
Sr 90	6.92E-01		2.88E-03	6.49E+04	Sr 90
Sr 91	2.06E+01		8.57E-02	1.93E+06	Sr 91
Zr 95	7.47E+00		3.11E-02	7.00E+05	Zr 95
Zr 97	7.47E+00		3.11E-02	7.00E+05	Zr 97
Nb 95	7.47E+00		3.11E-02	7.00E+05	Nb 95
Mo 99	7.97E+00		3.32E-02	7.47E+05	Mo 99
Ru 103	5.48E+00		2.28E-02	5.14E+05	Ru 103
Ru 106	1.25E+00		5.19E-03	1.17E+05	Ru 106
I 131	1.85E+02		7.72E-01	1.74E+07	I 131
I 132	2.61E+02		1.09E+00	2.45E+07	I 132
I 133	3.71E+02		1.54E+00	3.47E+07	I 133
I 134	4.14E+02		1.72E+00	3.88E+07	I 134
I 135	3.27E+02		1.36E+00	3.06E+07	I 135
Xe 131m	5.93E+00		2.47E-02	5.56E+05	Xe 131m
Xe 133	1.01E+03		4.19E+00	9.43E+07	Xe 133
Xe 133m	3.55E+01		1.48E-01	3.33E+06	Xe 133m
Xe 135	2.01E+02		8.38E-01	1.89E+07	Xe 135
Xe 138	1.01E+03		4.19E+00	9.43E+07	Xe 138
Cs 134	1.17E+01		4.86E-02	1.09E+06	Cs 134
Cs 136	4.67E+00		1.95E-02	4.38E+05	Cs 136
Cs 137	7.32E+00		3.05E-02	6.86E+05	Cs 137
Ba 140	3.98E+01		1.66E-01	3.74E+06	Ba 140
La 140	7.97E+00		3.32E-02	7.47E+05	La 140
Ce 141	9.36E+00		3.90E-02	8.78E+05	Ce 141
Ce 144	5.28E+00		2.20E-02	4.95E+05	Ce 144

Total Act. 4.80E+03 uci/cc 2.00E+01 uci/cc 4.50E+08 uci/sec

DEI 3.29E+02 uci/cc

Boron Conc. 1140 ppm

5 E6 cc/sec  
90 uci.cc



# Chemistry Data

Sample Date: 20011003

Sample Time: 1100 hrs.

Analysis 1110 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment Atmosphere GT RE 31/32	Aux Building Unit Vent GT RE-21B	Isotope
			conc. (uci/cc)	R. Rate. (uci/sec)	
Kr 85	3.29E+00	#	1.64E-02	3.15E+05	Kr 85
Kr 85m	1.42E+02	#	7.10E-01	1.36E+07	Kr 85m
Kr 87	2.78E+02		1.39E+00	2.66E+07	Kr 87
Kr 88	4.02E+02		2.01E+00	3.86E+07	Kr 88
Sr 89	1.76E+01		8.79E-02	1.68E+06	Sr 89
Sr 90	6.92E-01		3.46E-03	6.63E+04	Sr 90
Sr 91	2.06E+01		1.03E-01	1.97E+06	Sr 91
Zr 95	7.47E+00		3.74E-02	7.16E+05	Zr 95
Zr 97	7.47E+00		3.74E-02	7.16E+05	Zr 97
Nb 95	7.47E+00		3.74E-02	7.16E+05	Nb 95
Mo 99	7.97E+00		3.98E-02	7.64E+05	Mo 99
Ru 103	5.48E+00		2.74E-02	5.25E+05	Ru 103
Ru 106	1.25E+00		6.23E-03	1.19E+05	Ru 106
I 131	1.85E+02		9.26E-01	1.78E+07	I 131
I 132	2.61E+02		1.31E+00	2.51E+07	I 132
I 133	3.71E+02		1.85E+00	3.55E+07	I 133
I 134	4.14E+02		2.07E+00	3.97E+07	I 134
I 135	3.27E+02		1.63E+00	3.13E+07	I 135
Xe 131m	5.93E+00		2.96E-02	5.68E+05	Xe 131m
Xe 133	1.01E+03		5.03E+00	9.64E+07	Xe 133
Xe 133m	3.55E+01		1.78E-01	3.40E+06	Xe 133m
Xe 135	2.01E+02		1.01E+00	1.93E+07	Xe 135
Xe 138	1.01E+03		5.03E+00	9.64E+07	Xe 138
Cs 134	1.17E+01		5.83E-02	1.12E+06	Cs 134
Cs 136	4.67E+00		2.34E-02	4.48E+05	Cs 136
Cs 137	7.32E+00		3.66E-02	7.02E+05	Cs 137
Ba 140	3.98E+01		1.99E-01	3.82E+06	Ba 140
La 140	7.97E+00		3.98E-02	7.64E+05	La 140
Ce 141	9.36E+00		4.68E-02	8.97E+05	Ce 141
Ce 144	5.28E+00		2.64E-02	5.06E+05	Ce 144

Total Act. 4.80E+03 uci/cc 2.40E+01 uci/cc 4.60E+08 uci/sec

DEI 3.29E+02 uci/cc

Boron Conc. 1145 ppm

5 E6 cc/sec  
92 uci/cc

# Chemistry Data

Sample Date: 20011003

Sample Time: 1130 hrs.

Analysis 1140 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment	Aux Building	Isotope
			Atmosphere GT RE 31/32 conc. (uci/cc)	Unit Vent GT RE-21B R. Rate. (uci/sec)	
Kr 85	3.29E+00	#	1.71E-02	3.08E+05	Kr 85
Kr 85m	1.42E+02	#	7.39E-01	1.33E+07	Kr 85m
Kr 87	2.78E+02		1.45E+00	2.61E+07	Kr 87
Kr 88	4.02E+02		2.10E+00	3.77E+07	Kr 88
Sr 89	1.76E+01		9.16E-02	1.65E+06	Sr 89
Sr 90	6.92E-01		3.61E-03	6.49E+04	Sr 90
Sr 91	2.06E+01		1.07E-01	1.93E+06	Sr 91
Zr 95	7.47E+00		3.89E-02	7.00E+05	Zr 95
Zr 97	7.47E+00		3.89E-02	7.00E+05	Zr 97
Nb 95	7.47E+00		3.89E-02	7.00E+05	Nb 95
Mo 99	7.97E+00		4.15E-02	7.47E+05	Mo 99
Ru 103	5.48E+00		2.85E-02	5.14E+05	Ru 103
Ru 106	1.25E+00		6.48E-03	1.17E+05	Ru 106
I 131	1.85E+02		9.65E-01	1.74E+07	I 131
I 132	2.61E+02		1.36E+00	2.45E+07	I 132
I 133	3.71E+02		1.93E+00	3.47E+07	I 133
I 134	4.14E+02		2.16E+00	3.88E+07	I 134
I 135	3.27E+02		1.70E+00	3.06E+07	I 135
Xe 131m	5.93E+00		3.09E-02	5.56E+05	Xe 131m
Xe 133	1.01E+03		5.24E+00	9.43E+07	Xe 133
Xe 133m	3.55E+01		1.85E-01	3.33E+06	Xe 133m
Xe 135	2.01E+02		1.05E+00	1.89E+07	Xe 135
Xe 138	1.01E+03		5.24E+00	9.43E+07	Xe 138
Cs 134	1.17E+01		6.07E-02	1.09E+06	Cs 134
Cs 136	4.67E+00		2.43E-02	4.38E+05	Cs 136
Cs 137	7.32E+00		3.81E-02	6.86E+05	Cs 137
Ba 140	3.98E+01		2.08E-01	3.74E+06	Ba 140
La 140	7.97E+00		4.15E-02	7.47E+05	La 140
Ce 141	9.36E+00		4.88E-02	8.78E+05	Ce 141
Ce 144	5.28E+00		2.75E-02	4.95E+05	Ce 144

Total Act. 4.80E+03 uci/cc 2.50E+01 uci/cc 4.50E+08 uci/sec

DEI 3.29E+02 uci/cc

Boron Conc. 1150 ppm

5 E6 cc/sec  
90 uci/cc

# Chemistry Data

Sample Date: 20011003

Sample Time: 1200 hrs.

Analysis 1210 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment Atmosphere GT RE 31/32	Aux Building Unit Vent GT RE-21B	Isotope
			conc. (uci/cc)	R. Rate. (uci/sec)	
Kr 85	3.25E+00	#	2.05E-02	3.01E+05	Kr 85
Kr 85m	1.40E+02	#	8.87E-01	1.30E+07	Kr 85m
Kr 87	2.75E+02		1.74E+00	2.55E+07	Kr 87
Kr 88	3.98E+02		2.52E+00	3.69E+07	Kr 88
Sr 89	1.74E+01		1.10E-01	1.61E+06	Sr 89
Sr 90	6.85E-01		4.33E-03	6.35E+04	Sr 90
Sr 91	2.04E+01		1.29E-01	1.89E+06	Sr 91
Zr 95	7.39E+00		4.67E-02	6.85E+05	Zr 95
Zr 97	7.39E+00		4.67E-02	6.85E+05	Zr 97
Nb 95	7.39E+00		4.67E-02	6.85E+05	Nb 95
Mo 99	7.89E+00		4.98E-02	7.30E+05	Mo 99
Ru 103	5.42E+00		3.42E-02	5.02E+05	Ru 103
Ru 106	1.23E+00		7.78E-03	1.14E+05	Ru 106
I 131	1.83E+02		1.16E+00	1.70E+07	I 131
I 132	2.59E+02		1.63E+00	2.40E+07	I 132
I 133	3.67E+02		2.32E+00	3.40E+07	I 133
I 134	4.10E+02		2.59E+00	3.79E+07	I 134
I 135	3.23E+02		2.04E+00	2.99E+07	I 135
Xe 131m	5.86E+00		3.70E-02	5.43E+05	Xe 131m
Xe 133	9.96E+02		6.29E+00	9.22E+07	Xe 133
Xe 133m	3.51E+01		2.22E-01	3.25E+06	Xe 133m
Xe 135	1.99E+02		1.26E+00	1.84E+07	Xe 135
Xe 138	9.96E+02		6.29E+00	9.22E+07	Xe 138
Cs 134	1.15E+01		7.28E-02	1.07E+06	Cs 134
Cs 136	4.62E+00		2.92E-02	4.28E+05	Cs 136
Cs 137	7.24E+00		4.58E-02	6.71E+05	Cs 137
Ba 140	3.94E+01		2.49E-01	3.65E+06	Ba 140
La 140	7.89E+00		4.98E-02	7.30E+05	La 140
Ce 141	9.27E+00		5.85E-02	8.58E+05	Ce 141
Ce 144	5.22E+00		3.30E-02	4.84E+05	Ce 144

Total Act. 4.75E+03 uci/cc 3.00E+01 uci/cc 4.40E+08 uci/sec

DEI 3.26E+02 uci/cc

Boron Conc. 1200 ppm

5 E6 cc/sec  
88 uci/cc

# Chemistry Data

Sample Date: 20011003  
Sample Time: 1230 hrs.

Analysis 1240 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment Atmosphere GT RE 31/32	Aux Building Unit Vent GT RE-21B	Isotope
			conc. (uci/cc)	R. Rate. (uci/sec)	
Kr 85	3.25E+00	#	2.19E-02	2.94E+05	Kr 85
Kr 85m	1.40E+02	#	9.46E-01	1.27E+07	Kr 85m
Kr 87	2.75E+02		1.85E+00	2.49E+07	Kr 87
Kr 88	3.98E+02		2.68E+00	3.60E+07	Kr 88
Sr 89	1.74E+01		1.17E-01	1.57E+06	Sr 89
Sr 90	6.85E-01		4.61E-03	6.20E+04	Sr 90
Sr 91	2.04E+01		1.37E-01	1.84E+06	Sr 91
Zr 95	7.39E+00		4.98E-02	6.69E+05	Zr 95
Zr 97	7.39E+00		4.98E-02	6.69E+05	Zr 97
Nb 95	7.39E+00		4.98E-02	6.69E+05	Nb 95
Mo 99	7.89E+00		5.31E-02	7.14E+05	Mo 99
Ru 103	5.42E+00		3.65E-02	4.91E+05	Ru 103
Ru 106	1.23E+00		8.30E-03	1.12E+05	Ru 106
I 131	1.83E+02		1.24E+00	1.66E+07	I 131
I 132	2.59E+02		1.74E+00	2.34E+07	I 132
I 133	3.67E+02		2.47E+00	3.32E+07	I 133
I 134	4.10E+02		2.76E+00	3.71E+07	I 134
I 135	3.23E+02		2.18E+00	2.93E+07	I 135
Xe 131m	5.86E+00		3.95E-02	5.31E+05	Xe 131m
Xe 133	9.96E+02		6.71E+00	9.01E+07	Xe 133
Xe 133m	3.51E+01		2.37E-01	3.18E+06	Xe 133m
Xe 135	1.99E+02		1.34E+00	1.80E+07	Xe 135
Xe 138	9.96E+02		6.71E+00	9.01E+07	Xe 138
Cs 134	1.15E+01		7.77E-02	1.04E+06	Cs 134
Cs 136	4.62E+00		3.11E-02	4.18E+05	Cs 136
Cs 137	7.24E+00		4.88E-02	6.56E+05	Cs 137
Ba 140	3.94E+01		2.66E-01	3.57E+06	Ba 140
La 140	7.89E+00		5.31E-02	7.14E+05	La 140
Ce 141	9.27E+00		6.24E-02	8.39E+05	Ce 141
Ce 144	5.22E+00		3.52E-02	4.73E+05	Ce 144

Total Act. 4.75E+03 uci/cc 3.20E+01 uci/cc 4.30E+08 uci/sec

DEI 3.26E+02 uci/cc

Boron Conc. 1200 ppm

5 E6 cc/sec  
86 uci/cc

# Chemistry Data

Sample Date: 20011003

Sample Time: 1300 hrs.

Release is stopped

Analysis 1310 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment	Aux Building	Isotope
			Atmosphere GT RE 31/32 conc. (uci/cc)	Unit Vent GT RE-21B R. Rate. (uci/sec)	
Kr 85	3.26E+00	#	2.40E-02	2.81E+05	Kr 85
Kr 85m	1.41E+02	#	1.03E+00	1.21E+07	Kr 85m
Kr 87	2.76E+02		2.03E+00	2.37E+07	Kr 87
Kr 88	3.99E+02		2.93E+00	3.44E+07	Kr 88
Sr 89	1.74E+01		1.28E-01	1.50E+06	Sr 89
Sr 90	6.86E-01		5.05E-03	5.91E+04	Sr 90
Sr 91	2.04E+01		1.50E-01	1.76E+06	Sr 91
Zr 95	7.41E+00		5.45E-02	6.38E+05	Zr 95
Zr 97	7.41E+00		5.45E-02	6.38E+05	Zr 97
Nb 95	7.41E+00		5.45E-02	6.38E+05	Nb 95
Mo 99	7.90E+00		5.81E-02	6.81E+05	Mo 99
Ru 103	5.43E+00		3.99E-02	4.68E+05	Ru 103
Ru 106	1.23E+00		9.08E-03	1.06E+05	Ru 106
I 131	1.84E+02		1.35E+00	1.58E+07	I 131
I 132	2.59E+02		1.91E+00	2.23E+07	I 132
I 133	3.67E+02		2.70E+00	3.16E+07	I 133
I 134	4.10E+02		3.02E+00	3.54E+07	I 134
I 135	3.24E+02		2.38E+00	2.79E+07	I 135
Xe 131m	5.88E+00		4.32E-02	5.06E+05	Xe 131m
Xe 133	9.98E+02		7.34E+00	8.59E+07	Xe 133
Xe 133m	3.52E+01		2.59E-01	3.03E+06	Xe 133m
Xe 135	2.00E+02		1.47E+00	1.72E+07	Xe 135
Xe 138	9.98E+02		7.34E+00	8.59E+07	Xe 138
Cs 134	1.16E+01		8.50E-02	9.95E+05	Cs 134
Cs 136	4.63E+00		3.41E-02	3.99E+05	Cs 136
Cs 137	7.26E+00		5.34E-02	6.25E+05	Cs 137
Ba 140	3.95E+01		2.91E-01	3.40E+06	Ba 140
La 140	7.90E+00		5.81E-02	6.81E+05	La 140
Ce 141	9.28E+00		6.83E-02	8.00E+05	Ce 141
Ce 144	5.24E+00		3.85E-02	4.51E+05	Ce 144

Total Act. 4.76E+03 uci/cc 3.50E+01 uci/cc 4.10E+08 uci/sec

DEI 3.26E+02 uci/cc Plugging completed Release Stopped.

Boron Conc. 1200 ppm 5 E6 cc/sec 82 uci/cc

# Chemistry Data

Sample Date: 20011003

Sample Time: 1330 hrs.

30 minutes after Release Stopped

Analysis 1340 hrs.

Isotope	RCS conc. (uci/cc)	#	Containment Atmosphere GT RE 31/32	Aux Building Unit Vent	Isotope
			conc. (uci/cc)	R. Rate. (uci/sec)	
Kr 85	3.22E+00	#	2.47E-02	6.85E+01	Kr 85
Kr 85m	1.39E+02	#	1.06E+00	2.96E+03	Kr 85m
Kr 87	2.72E+02		2.08E+00	5.79E+03	Kr 87
Kr 88	3.94E+02		3.02E+00	8.38E+03	Kr 88
Sr 89	1.72E+01		1.32E-01	3.66E+02	Sr 89
Sr 90	6.78E-01		5.19E-03	1.44E+01	Sr 90
Sr 91	2.01E+01		1.54E-01	4.29E+02	Sr 91
Zr 95	7.31E+00		5.60E-02	1.56E+02	Zr 95
Zr 97	7.31E+00		5.60E-02	1.56E+02	Zr 97
Nb 95	7.31E+00		5.60E-02	1.56E+02	Nb 95
Mo 99	7.80E+00		5.98E-02	1.66E+02	Mo 99
Ru 103	5.36E+00		4.11E-02	1.14E+02	Ru 103
Ru 106	1.22E+00		9.34E-03	2.59E+01	Ru 106
I 131	1.81E+02		1.39E+00	3.86E+03	I 131
I 132	2.56E+02		1.96E+00	5.45E+03	I 132
I 133	3.63E+02		2.78E+00	7.72E+03	I 133
I 134	4.05E+02		3.10E+00	8.62E+03	I 134
I 135	3.20E+02		2.45E+00	6.81E+03	I 135
Xe 131m	5.80E+00		4.44E-02	1.23E+02	Xe 131m
Xe 133	9.85E+02		7.55E+00	2.10E+04	Xe 133
Xe 133m	3.48E+01		2.66E-01	7.40E+02	Xe 133m
Xe 135	1.97E+02		1.51E+00	4.19E+03	Xe 135
Xe 138	9.85E+02		7.55E+00	2.10E+04	Xe 138
Cs 134	1.14E+01		8.74E-02	2.43E+02	Cs 134
Cs 136	4.57E+00		3.50E-02	9.73E+01	Cs 136
Cs 137	7.17E+00		5.49E-02	1.53E+02	Cs 137
Ba 140	3.90E+01		2.99E-01	8.30E+02	Ba 140
La 140	7.80E+00		5.98E-02	1.66E+02	La 140
Ce 141	9.17E+00		7.02E-02	1.95E+02	Ce 141
Ce 144	5.17E+00		3.96E-02	1.10E+02	Ce 144

Total Act. 4.70E+03 uci/cc 3.60E+01 uci/cc 1.00E+05 uci/sec

DEI 3.22E+02 uci/cc

Boron Conc. 1200 ppm

5 E6 cc/sec

.02 uci/cc

In-Plant Surveys

To Whom It May Concern:

There is a disconnect designed into the Radiological Data of this Exercise package. In order to drive the projected doses to the levels required to support the Off-site Protective Actions, the level of radioactivity in the release path and the release rate has been manually elevated.

The level of radioactivity in the Reactor Building/Containment (the source) is lower than that which is being released. Any questions from players in regards to the data associated with this disconnect should be answered by the controller for that area and the players should be informed that they should use the indicated release data or survey information. The discussion should be brief with only the information necessary to keep the scenario on track. Any additional information has the possibility to be considered coaching.

Dale R. Lewis  
Rad/Chem Supervisor, EP  
Lead Drill Controller



## HP and FMT Controllers

When releasing data to Field Monitoring Teams or providing data from radiological survey maps, take note of the following items and provide the corresponding information:

- What instrument(s) is(are) being used?
- Is it turned on
- What scale is it on

The information you release should be adjusted to be valid for the instrument(s) being used. Air sample results should be rounded up or down and 100 cpm is the minimum detectable limit.

The following is provided for your information.

### LUDDLUM MODEL 14C

#### PRECAUTIONS AND LIMITATIONS

- THE MODEL 14C MAY NOT BE USED TO QUANTIFY BETA DOSE RATES. USE THE APPROPRIATE ION CHAMBER INSTRUMENT TO ESTABLISH BETA DOSE RATES.
- THE X1000 RANGE UTILIZES AN INTERNAL DETECTOR.
- THE BATTERIES SHOULD BE REMOVED FROM THE INSTRUMENT ANYTIME IT IS NOT GOING TO BE USED FOR A LONG PERIOD OF TIME.

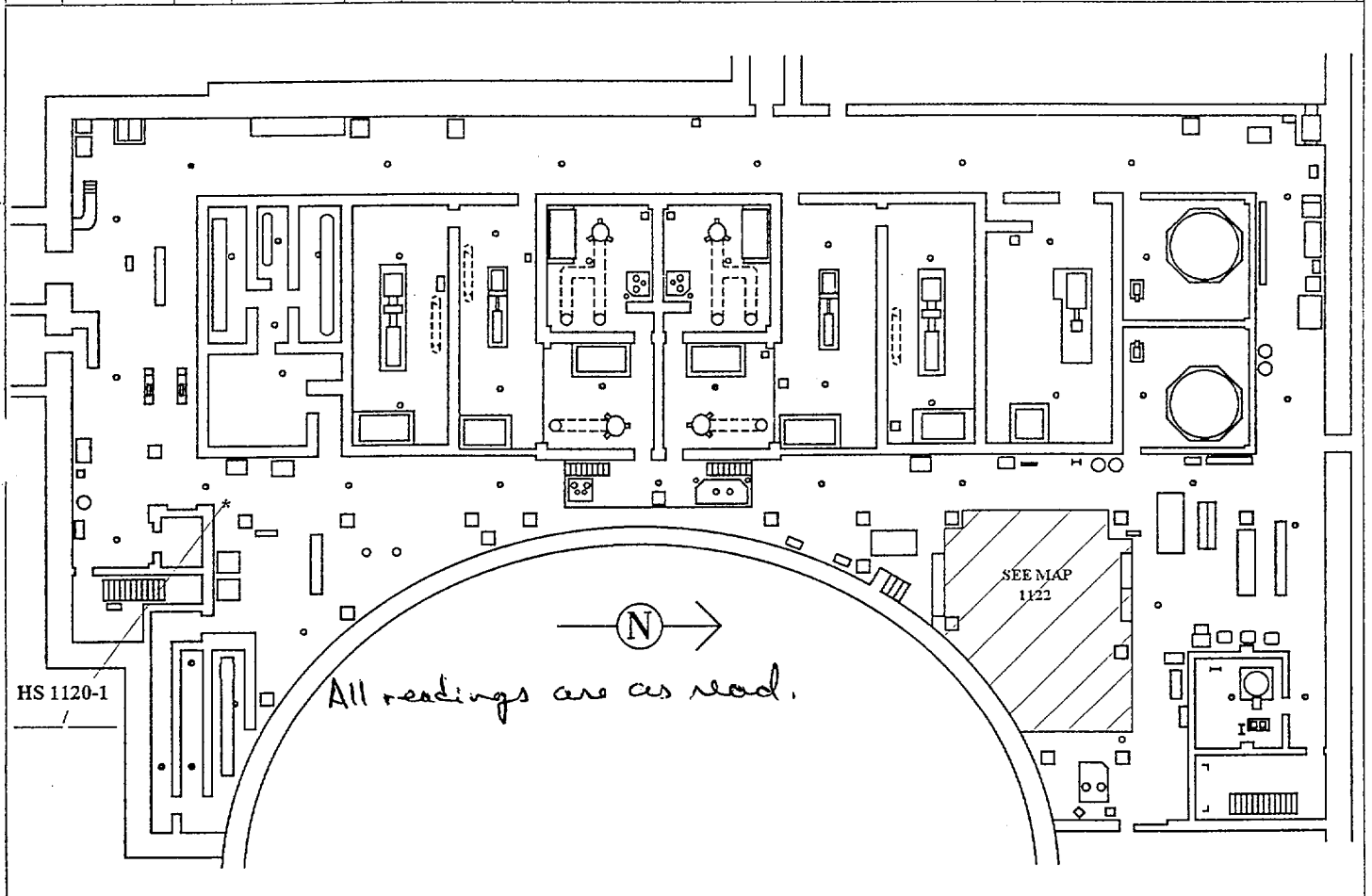
#### OPERATING CHARACTERISTICS

- THE MODEL 14C IS A PORTABLE SURVEY INSTRUMENT USED FOR THE MEASUREMENT OF GAMMA EXPOSURE RATES AND THE DETECTION OF BETA RADIATION. THE 14C HAS RANGES OF 0-.2 MR/HR, 0-2 MR/HR, 0-20 MR/HR, 0-200 MR/HR, AND 0-2000 MR/HR.
- THIS INSTRUMENT IS TYPICALLY USED FOR GENERAL AREA LOW LEVEL RADIATION SURVEYS USING A HAND HELD SIDE WINDOW GM DETECTOR FOR THE 4 LOWEST RANGES AND AN INTERNAL GM DETECTOR FOR THE HIGHEST RANGE.
- THERE IS A BETA SHIELD ON THE SIDE-WINDOW GM DETECTOR TO BE USED FOR BETA DETECTION. THE INTERNAL DETECTOR MEASURES GAMMA EXPOSURE ONLY.

### LUDDLUM MODEL RO-2(X)

#### OPERATING CHARACTERISTICS

- THE RO-2(X) SERIES ARE PORTABLE ION CHAMBER INSTRUMENTS USED TO DETECT BETA AND GAMMA RADIATION.
- THE RO-2 HAS 4 DECADE RANGES WITH A MAXIMUM OF 5 R/HR.
- THE RO-2A HAS 4 DECADE RANGES WITH A MAXIMUM OF 50 R/HR.
- THE RO-20 HAS 5 DECADE RANGES WITH A MAXIMUM OF 50 R/HR.

[illegible]

**Dose Rate Range**  
**mRem/Hr**

All air samples  $10 \text{ ft}^3$  5 min at 2 cfm

Iodine cartridge n. cpm =  
Pauli cartridge n. cpm =

## DOSE

1000 - 1014

**SURVEYED BY:**

BADGE NO:

TIME/DATE:

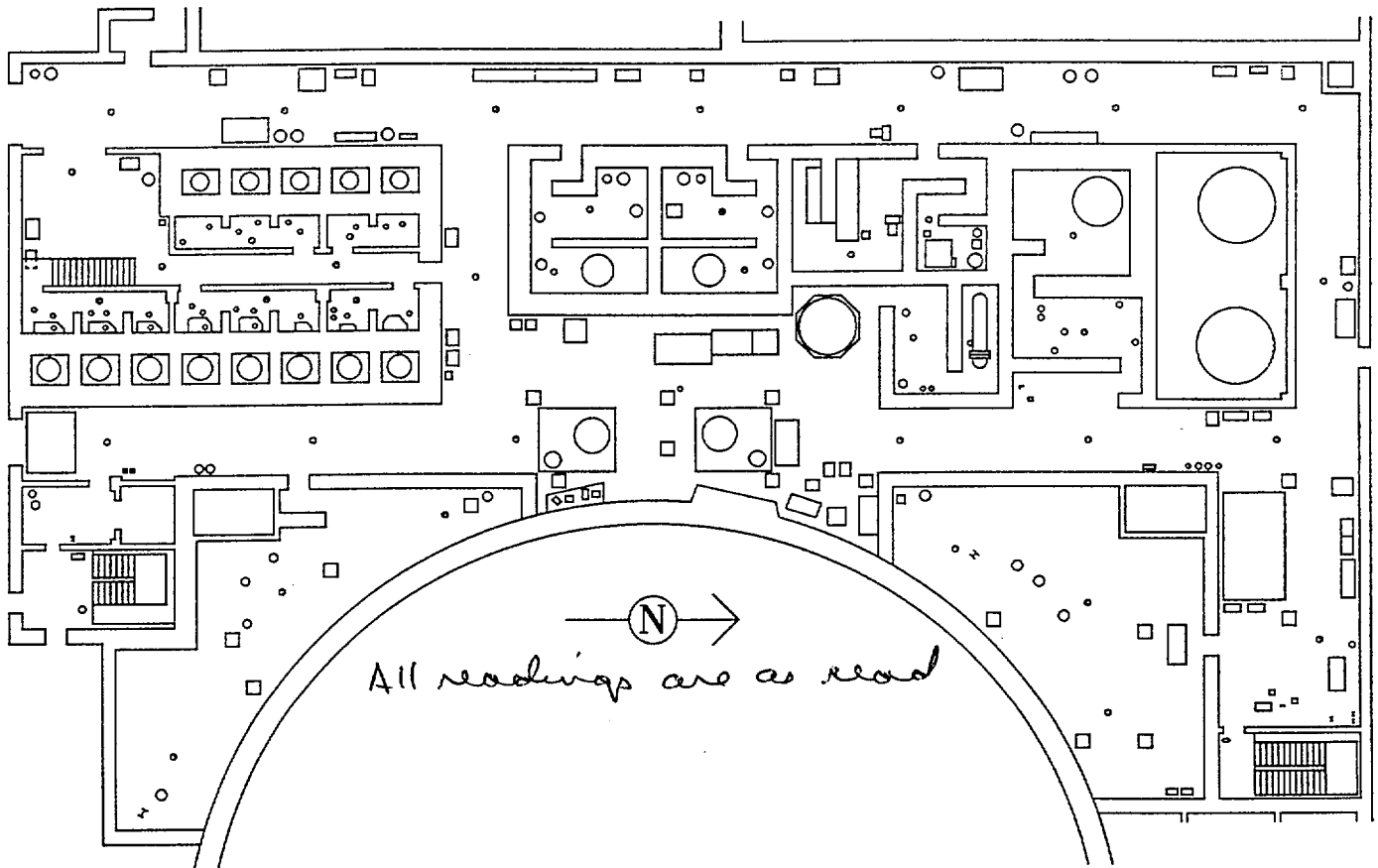
REVIEWED BY:

BADGE NO:

DATE:

HP Tech 003

10-3-01

[illegible]

**Dose Rate Range**  
**mRem/Hr**

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm  
Iodine cartridge n. cpm =  
Part. cartridge n. cpm =

## DOSE

DATE:

HP Tech

003

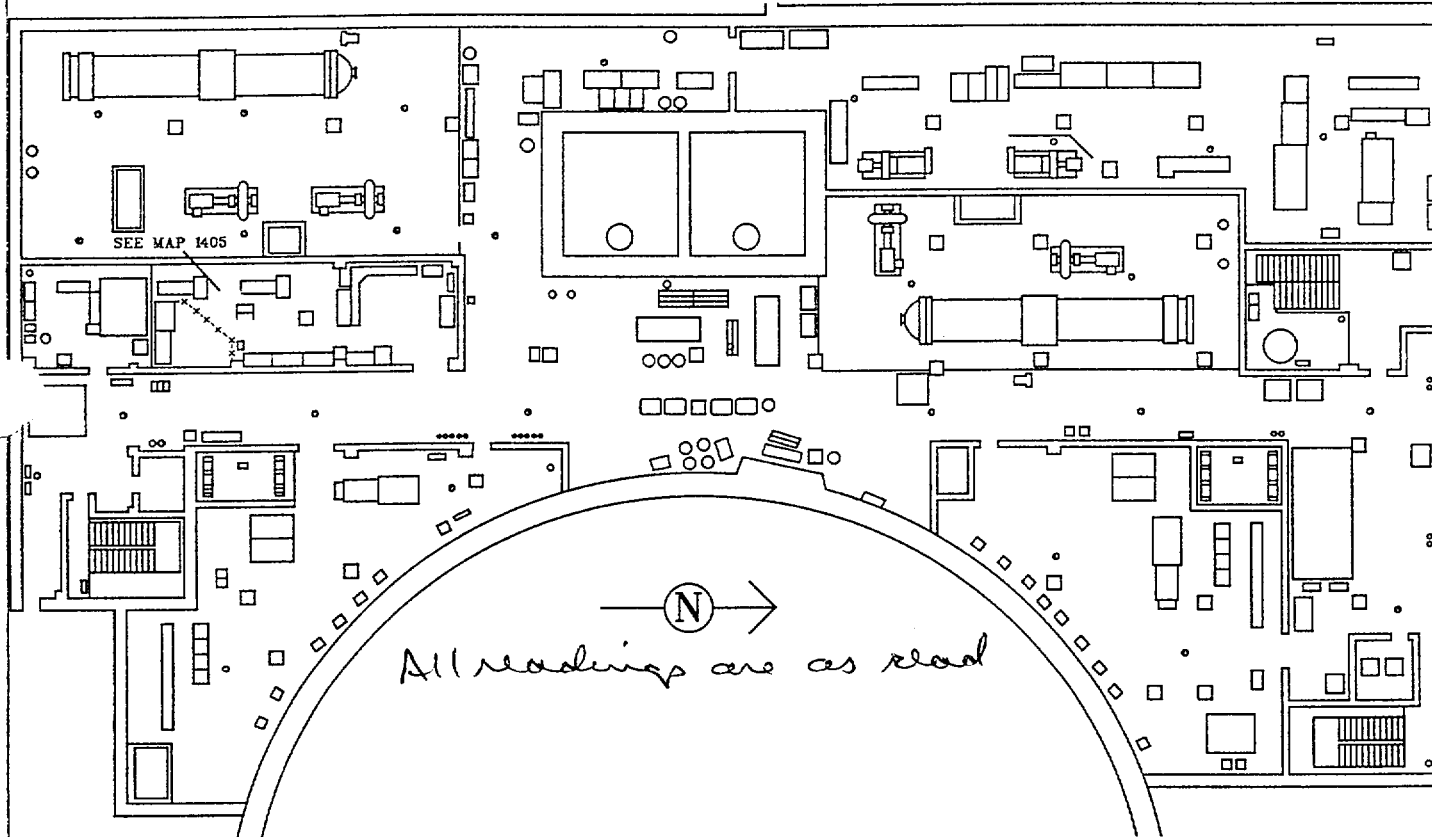
103-01

19 AUG 2000

H210.0001

## CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2026 GENERAL AREA				MAP NO: AB-2026	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO:		INST:	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:		LEGEND	
<input checked="" type="checkbox"/> OTHER <i>Dwell</i>		<i>01-911</i>		① = SMEAR	
ALPHA/BETA		ALPHA/BETA		④ = LARGE AREA SMEAR	
SM. #	DPM/CPM	SM. #	DPM/CPM	② = BETA mrad/hr	
				No. = GAMMA mrem/hr	
				*/ = CONTACT/12"	
				<input checked="" type="checkbox"/> NEUTRON mrem/hr	
				<input checked="" type="checkbox"/> ALL SMEARS < 1000 dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
				<input checked="" type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED	
				<input type="checkbox"/> ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED	
				<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
				<input type="checkbox"/> CNTD SMEARS < 20 dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
				LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN	
				<input type="checkbox"/> OTHER _____	



## REMARKS

Dose Rate Range

mRem/Hr

All air samples 10 ft<sup>3</sup> 5 min. at 2 cfm  
 Iodine cartridge n.cpm =  
 Part. cartridge n.cpm =

DOSE

1000-1014

RVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE:

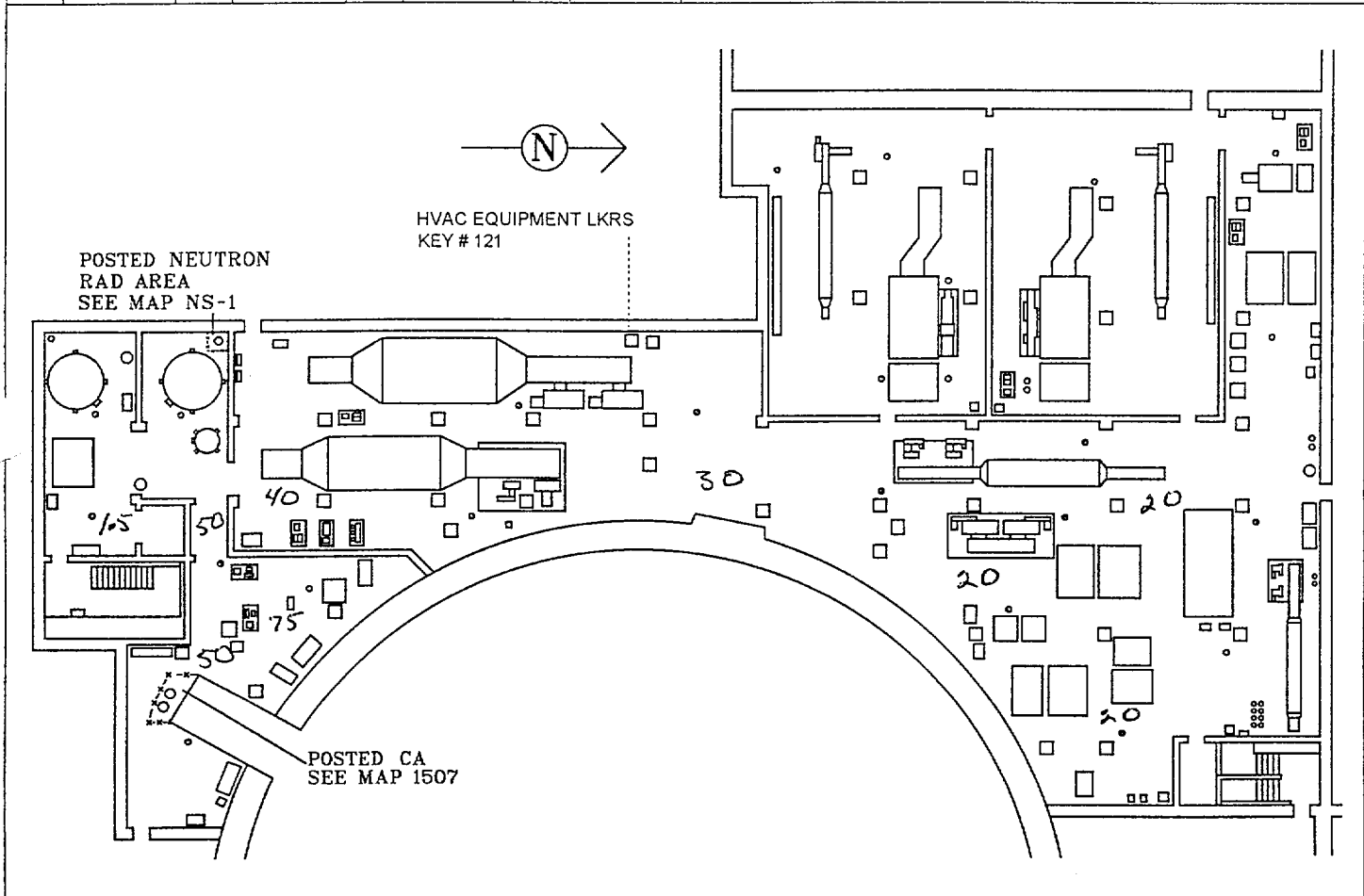
H/P Tech

003

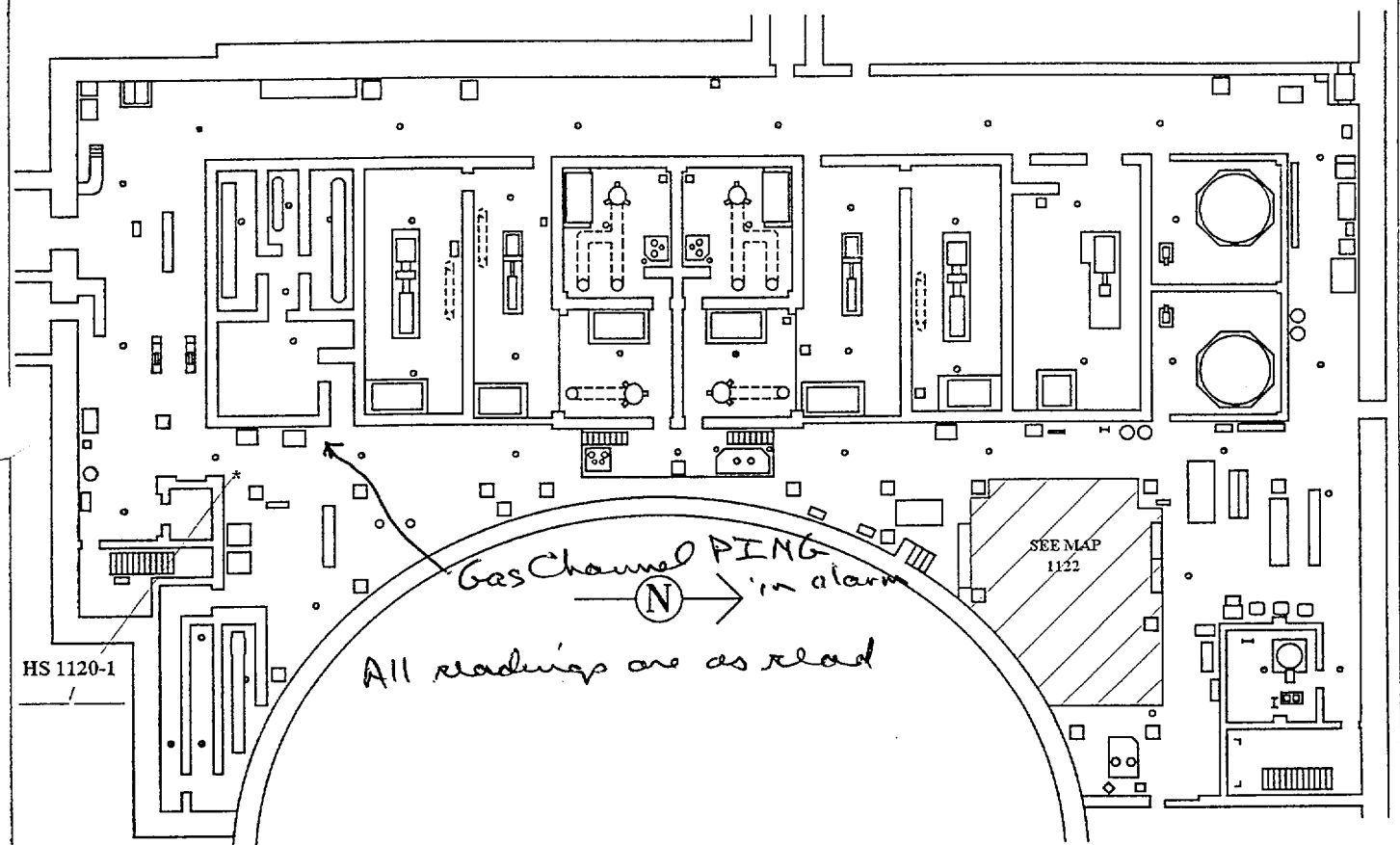
10-3-01

18 AUG 2000

H210.0001

[illegible]

REMARKS			
Dose Rate Range		All air samples 10 ft <sup>3</sup> 5 min. at 2 ft m	
_____ mRem/Hr		Iodine cartridge	n. cpm =
		Paet cartridge	n. cpm =
DOSE			
SURVEYED BY:		BADGE NO:	TIME/DATE:
HP Tech		003	10-3-01
REVIEWED BY:		BADGE NO:	DATE:

[illegible]

REMARKS

### Dose Rate Range

mRem/Hr

All air samples  $10 \text{ ft}^3$  5 min at 2 cfm

Iodine cartridge n. cpm =  $< 100$

Pack. cartridge n. cpm =  $< 100$

### DOSE

1015-1029

URVEYED BY:

**BADGE NO:**

TIME/DATE:

REVIEWED BY:

BADGE NO:

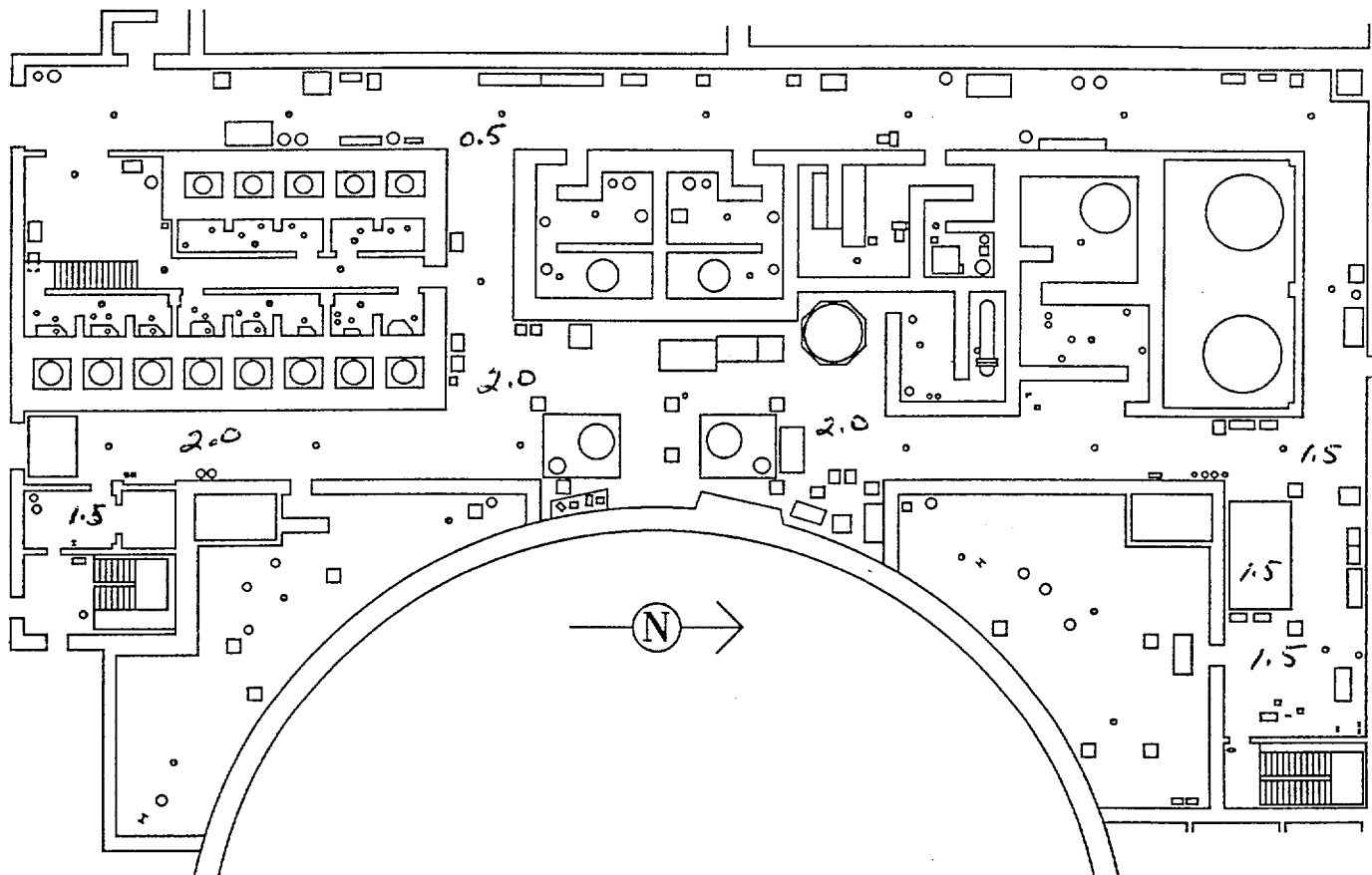
DATE:

HP Tech 003

10-3-01

19 AUG 2000

H210.00001

[illegible]

### Dose Rate Range

mRem/Hr

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm

Iodine cartridge n. cpm = 2100

Pant. cartridge r. cpm =  $\times 100$

### DOSE

IRVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

**BADGE NO:**

DATE: \_\_\_\_\_

HP Tech

003

103-01

19 AUG 2000

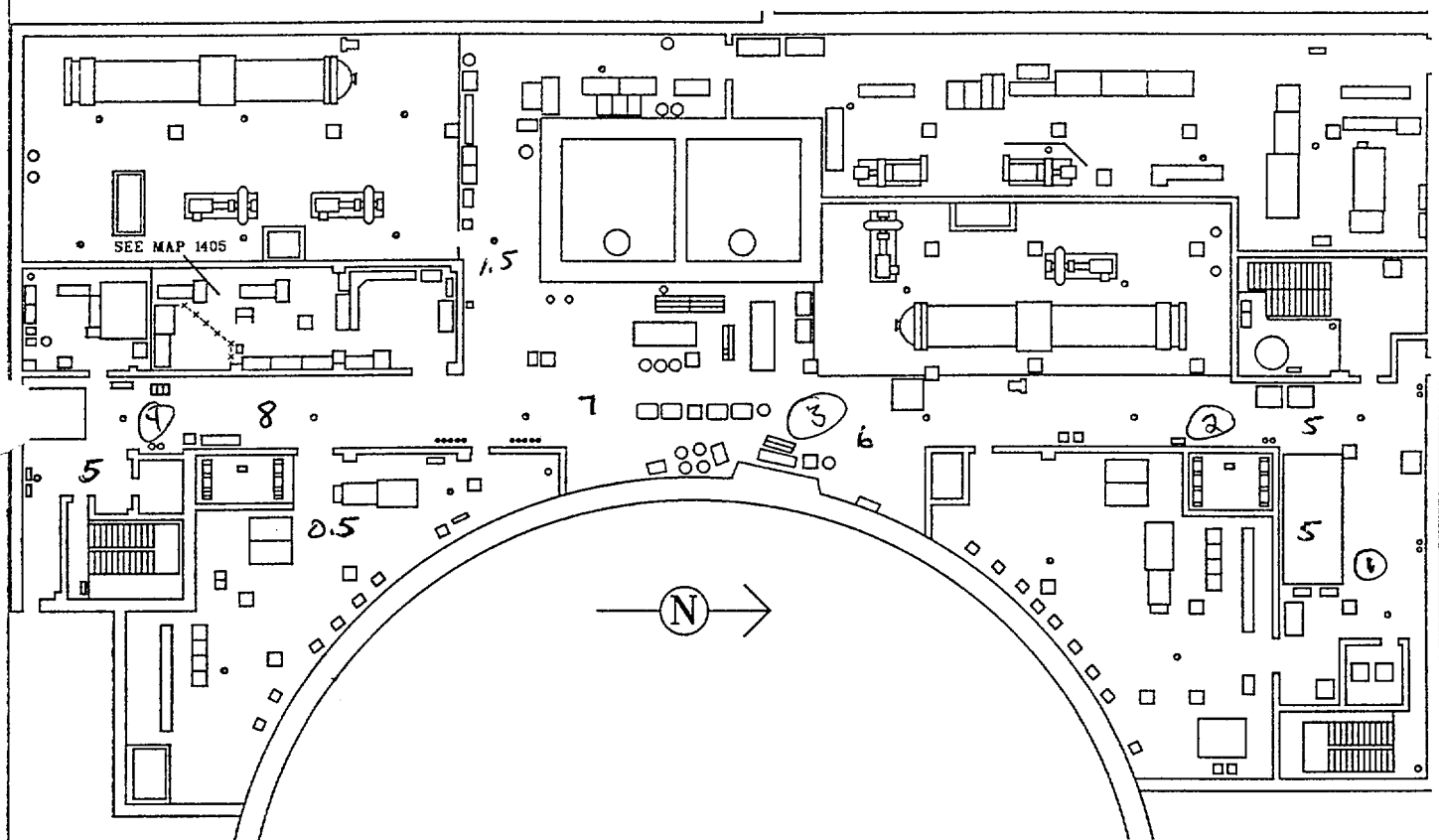
H210.0001

## CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2026 GENERAL AREA						MAP NO: AB-2026	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO: 01-911		INST:		LEGEND ① = SMEAR ② = LARGE AREA SMEAR ③ = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" <input checked="" type="checkbox"/> NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE				ID. NO:			
OTHER: Drill							

ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA	
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM
1	100						
2	100						
3	150						
4	200						

☒ ALL SMEARS < 1000dpm/100cm<sup>2</sup> EXCEPT AS NOTED  
☒ ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED  
☐ ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED  
☐ NO HOT PARTICLES FOUND EXCEPT AS NOTED  
☐ CNTD SMEARS < 20dpm/100cm<sup>2</sup> ALPHA EXCEPT AS NOTED  
 LARGE AREA SMEAR MEDIUM USED ☐ TACKY CLOTH ☐ MASSLINN ☐ OTHER \_\_\_\_\_



## REMARKS

Dose Rate Range

\_\_\_\_\_ mRem/Hr

All air samples 10 ft<sup>3</sup> 5 min. at 2 cfm  
 Iodine cartridge n.cpm = 100  
 Part. cartridge n.cpm = < 100

DOSE

1015-1029

SURVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE:

H/P Tech

003

10-3-01

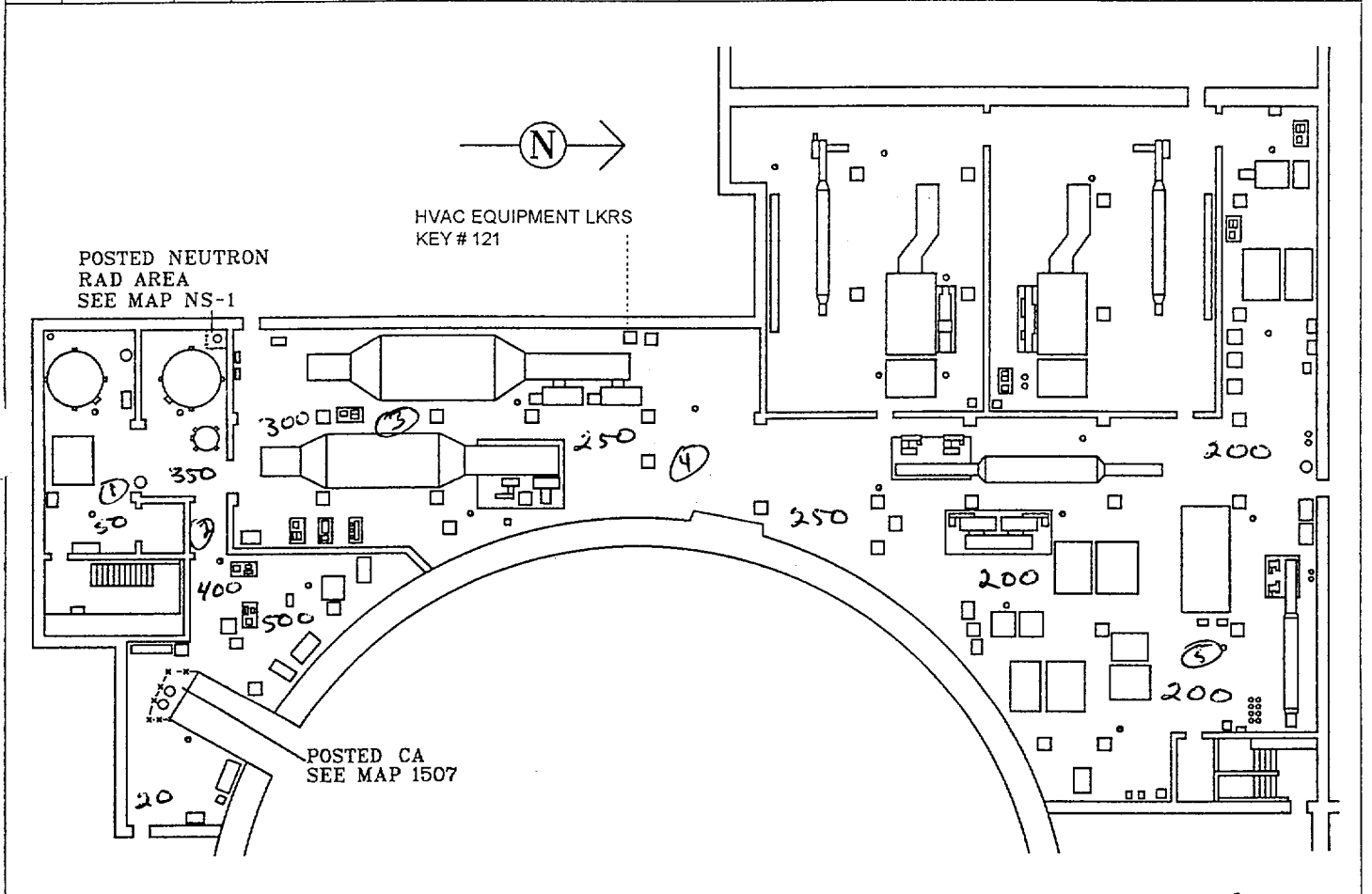
18 AUG 2000

H210.0001

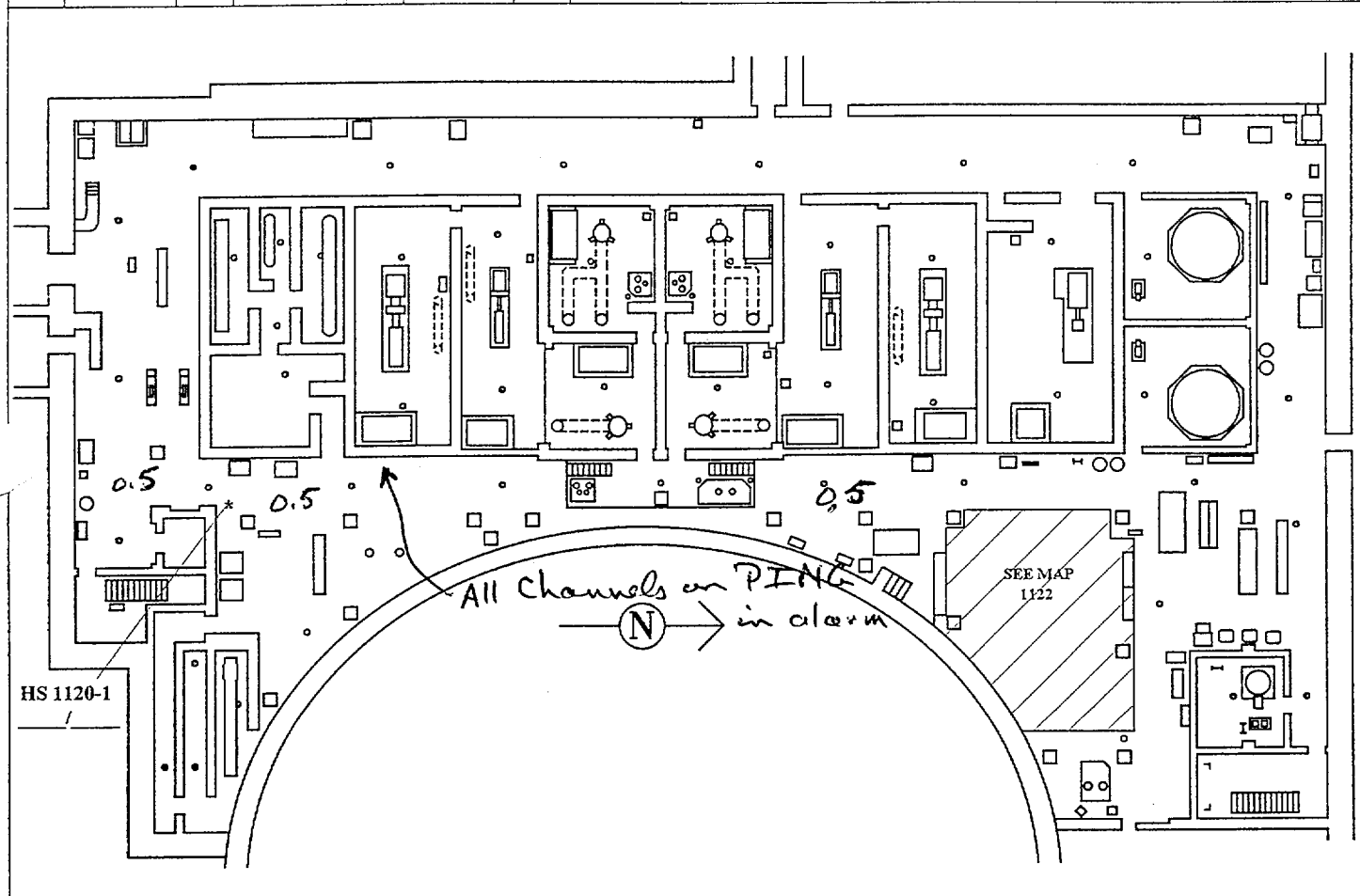


CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2047 GENERAL AREA								MAP NO: AB-2047	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB				RWP/WAD NO: 01-911		INST:		LEGEND ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" <input checked="" type="checkbox"/> NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE				ID. NO:					
<input checked="" type="checkbox"/> OTHER Drill									
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	200							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED  <input checked="" type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED <input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED  <input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED  <input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER	
2	350								
3	300								
4	150								
5	150								



REMARKS			
Dose Rate Range _____ mRem/Hr All air samples 10ft±3 5min. at 2cfm Iodine cartridge n. cpm = 500 Pant cartridge n. cpm = <100			
DOSE			
1015-1029			
REVIEWED BY:	BADGE NO:	TIME/DATE:	REVIEWED BY: BADGE NO: DATE:
HP Tech	003	10-3-01	

[illegible]

REMARKS

### Dose Rate Range

mRem/Hr

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm

Iodine cartridge n. cpm = 2100

Pauli cartridge n. cpm =  $< 100$

## DOSE

1030-1044

INTERVIEWED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

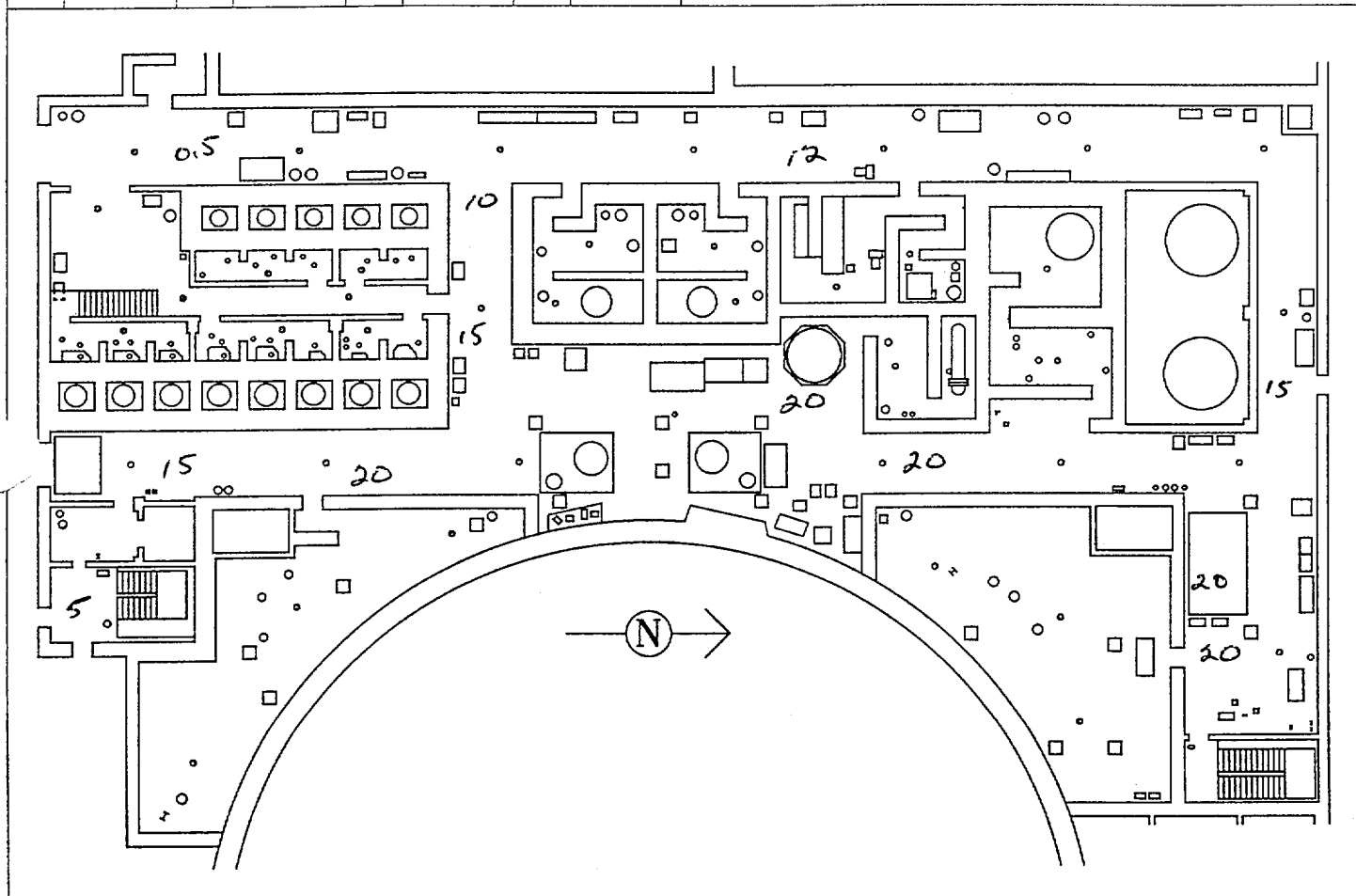
DATE:

HP Tech 003

10-3-01

19 AUG 2000

H210.00001

[illegible]

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm  
Iodine cartridge n. cpm = 200  
Part. cartridge n. cpm = < 100

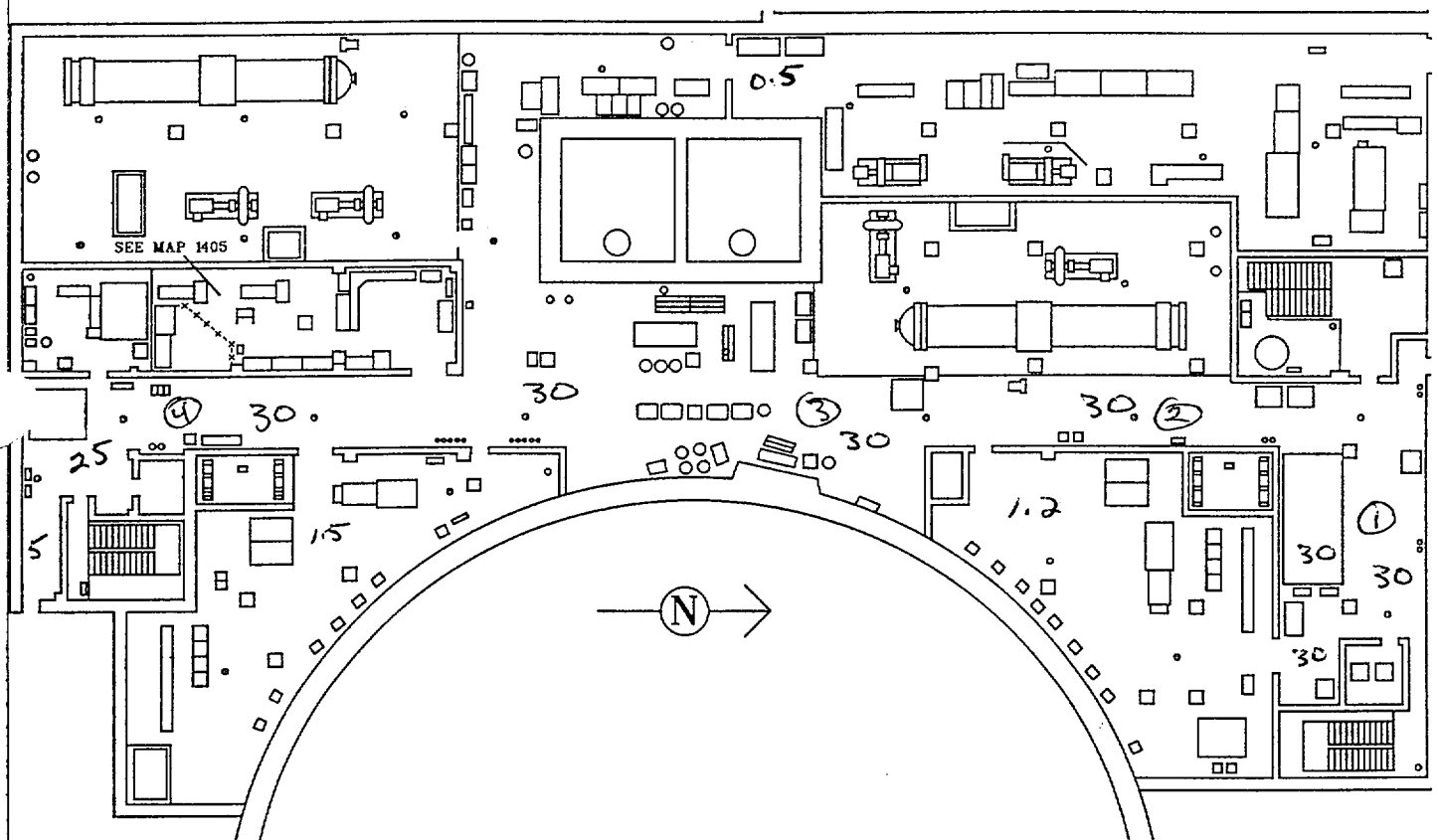
1030 - 1044

DATE:

10-3-01

H210.0001

LOCATION: AUXILIARY BUILDING 2026 GENERAL AREA								MAP NO: AB-2026	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB				RWP/WAD NO:		INST:		LEGEND ① = SMEAR ② = LARGE AREA SMEAR ③ = BETA mrad/hr No. = GAMMA mrem/hr 1/2 = CONTACT/12" ④ = NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE				ID. NO:					
<input checked="" type="checkbox"/> OTHER <u>Dwell</u>									
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	100							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
2	100							<input checked="" type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED	
3	150							<input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED	
4	200							<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
								<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____	



REMARKS

### Dose Rate Range

mRem/Hr

All air samples 10 ft<sup>3</sup> 5 min. at 2 cfm  
Iodine cartridge n.cpm = 200  
Part. cartridge n.cpm = <100

### DOSE

URVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

**BADGE NO:**

DATE: \_\_\_\_\_

H/P Tech

003

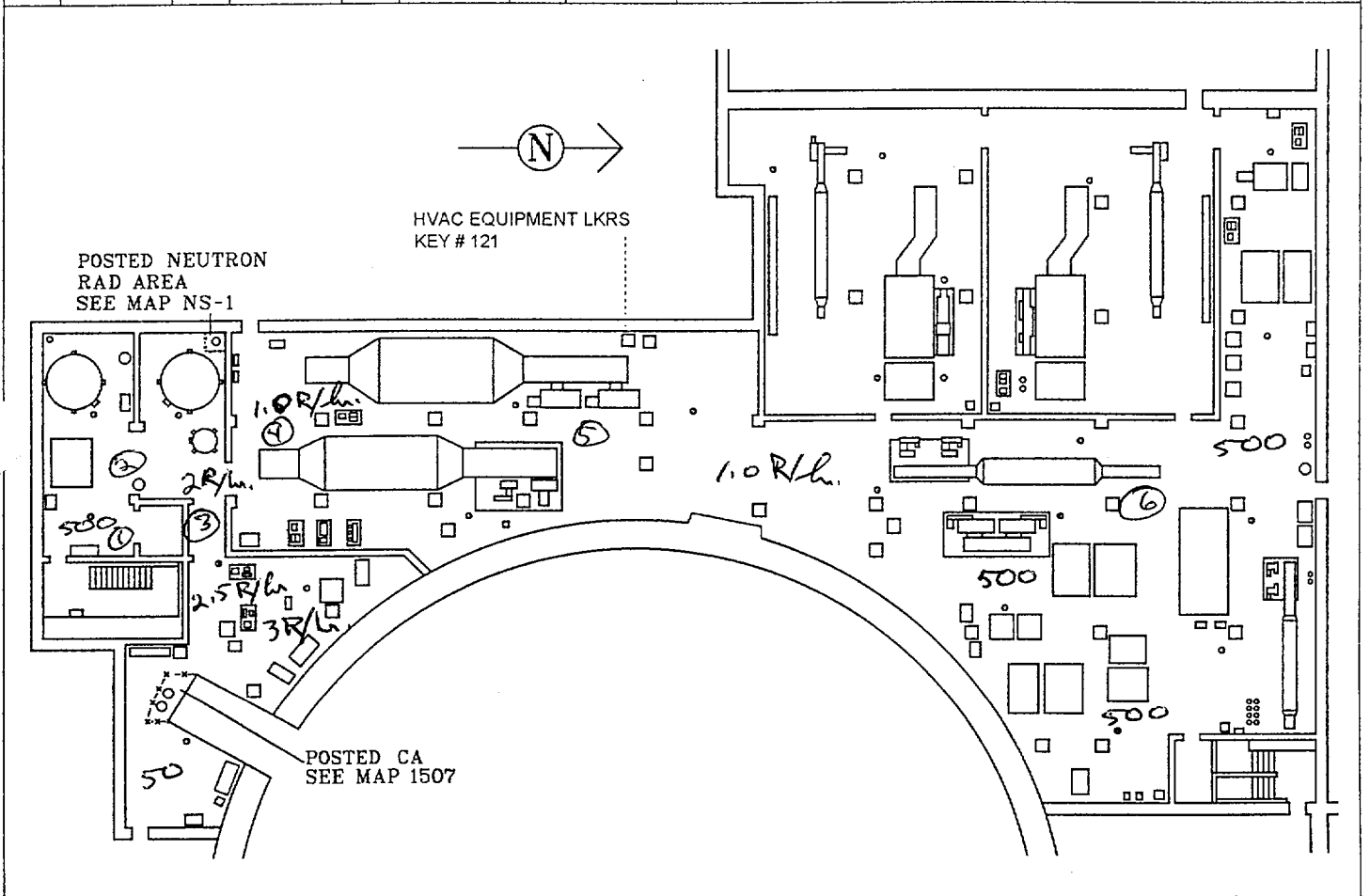
10-3-01

18 AUG 2000

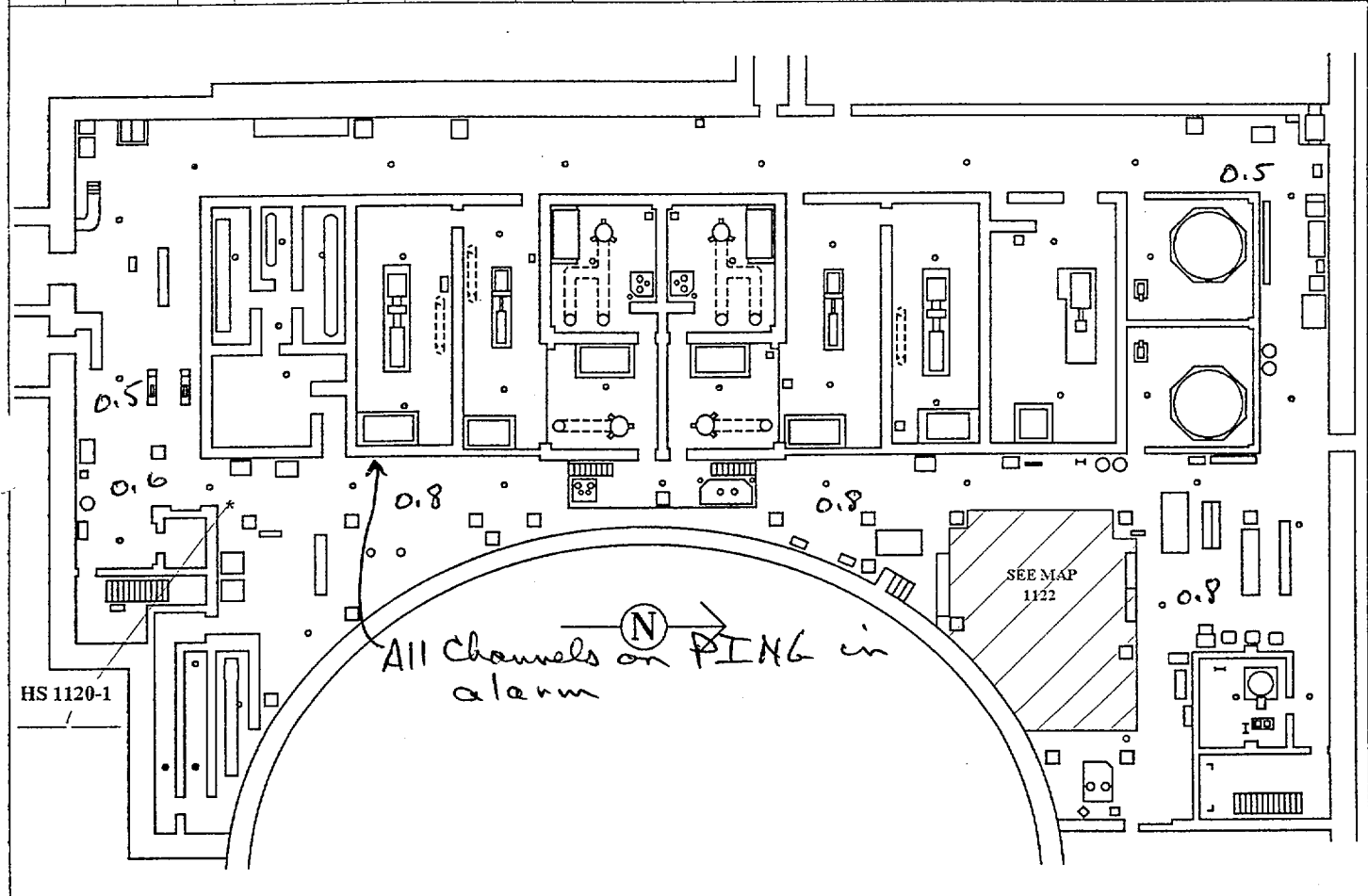
H210.0001

CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2047 GENERAL AREA						MAP NO: AB-2047	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO: 01-911		INST:		LEGEND ① = SMEAR ② = LARGE AREA SMEAR ③ = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" ⊕ = NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:					
<input checked="" type="checkbox"/> OTHER Drill							
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA	
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM
1	500						
2	700						
3	2K						
4	1.5K						
5	500						
6	400						
<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED <input checked="" type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED <input type="checkbox"/> ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED <input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED <input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____							



REMARKS			
Dose Rate Range _____ mRem/Hr All air samples 10 ft ± 3 5 min. at 2 ft m Iodine cartridge n. cpm = 3000 Pant cartridge n. cpm = 100			
DOSE			
1030-1044			
SURVEYED BY: HPTech BADGE NO: 003 TIME/DATE: 10-3-01	REVIEWED BY: _____ BADGE NO: _____ DATE: _____		

[illegible]

REMARKS

### Dose Rate Range

mRem/Hr

All air samples  $10 \text{ ft}^3$  5 min at 2 cfm

Iodine cartridge n. cpm =  $< 100$   
Pauli cartridge n. cpm =  $< 100$

## DOSE

1045-1059

1  
SURVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

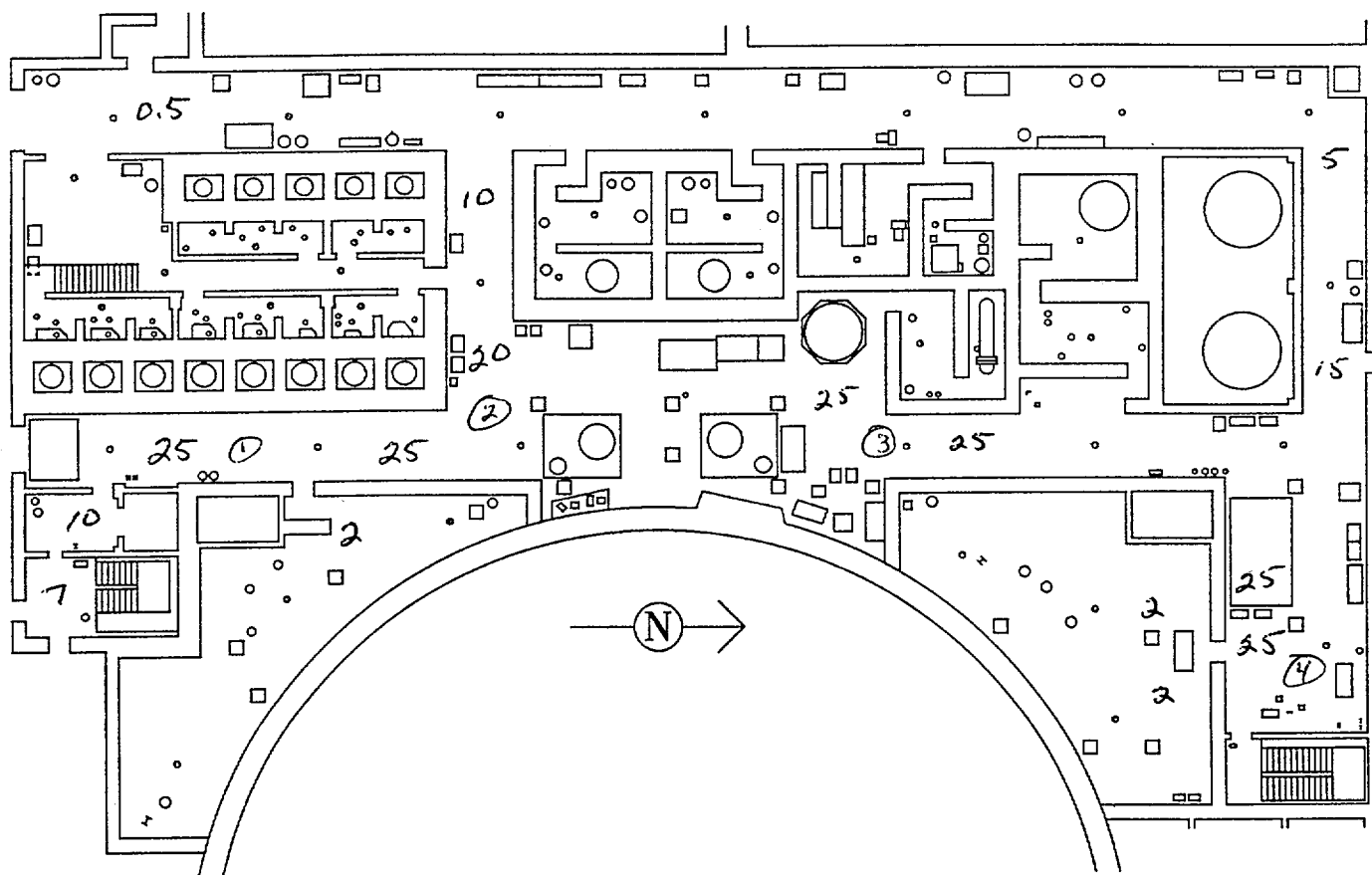
BADGE NO:

DATE: \_\_\_\_\_

HTech 003

10-3-01

LOCATION: AUXILIARY BUILDING 2000 GENERAL AREA								MAP NO: AB-2000	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB <input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER <u>Drill</u>				RWP/WAD NO: <u>01-911</u>		INST:		LEGEND ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No. = GAMMA mrem/hr */ = CONTACT/12" ③ = NEUTRON mrem/hr	
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	100							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
2	100							<input type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED	
3	100							<input type="checkbox"/> ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED	
4	100							<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
								<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____	



### Dose Rate Range

**mRem/Hr**

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm  
Iodine cartridge n. cpm = 500  
Part. cartridge n. cpm = <100

### DOSE

URVEYED BY:

**BADGE NO:**

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE:

HP Tech

003

10-3-01

19 AUG 2000

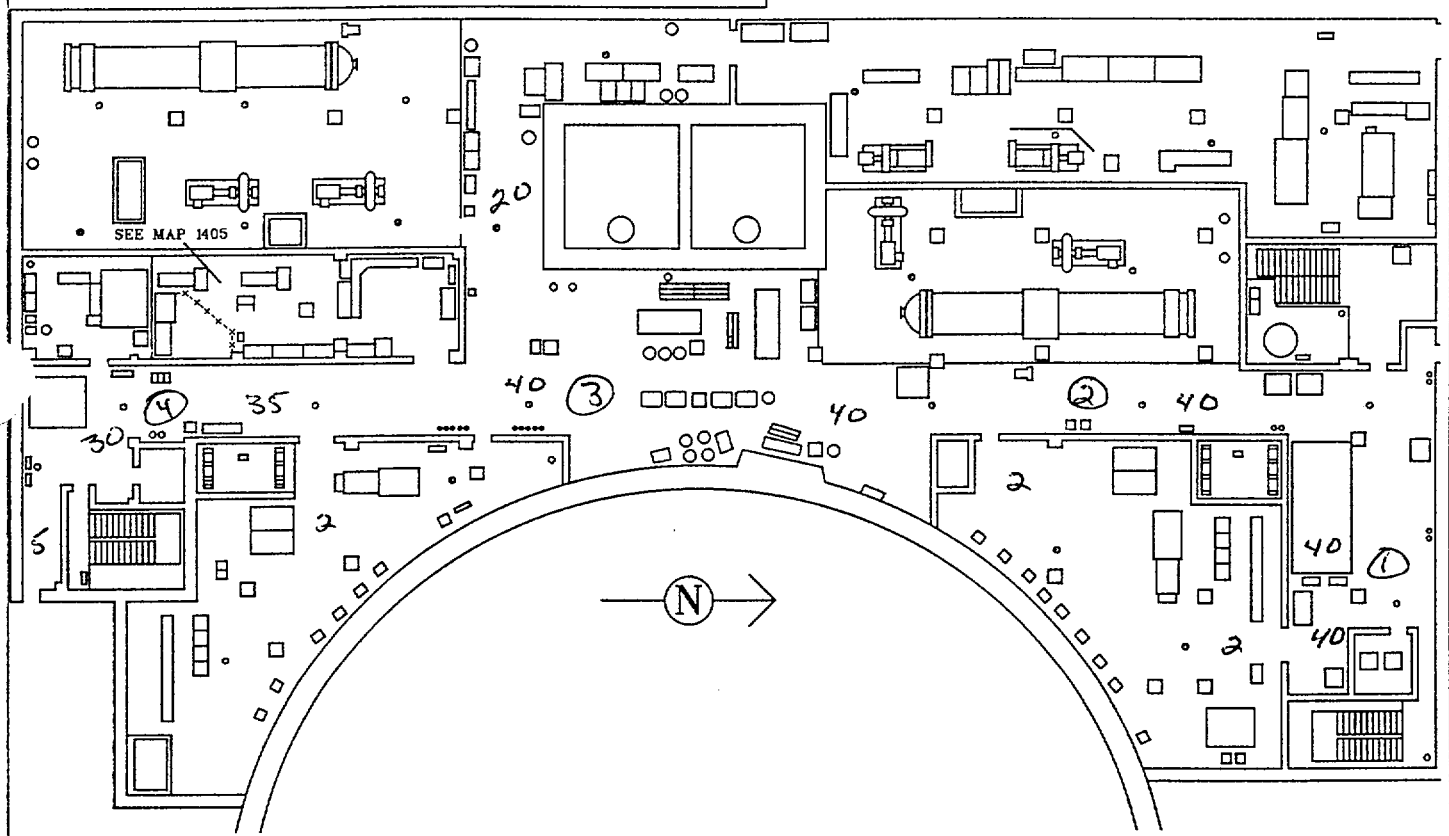
H210.0001

CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2026 GENERAL AREA				MAP NO: AB-2026	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO: 01-911		INST: _____	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO: _____		<b>LEGEND</b> ① = SMEAR ② = LARGE AREA SMEAR ③ = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" <input checked="" type="checkbox"/> NEUTRON mrem/hr	
<input checked="" type="checkbox"/> OTHER <i>Drill</i>					

ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA	
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM
1	150						
2	200						
3	200						
4	200						

☒ ALL SMEARS < 1000dpm/100cm<sup>2</sup> EXCEPT AS NOTED  
☒ ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED  
☐ ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED  
☐ NO HOT PARTICLES FOUND EXCEPT AS NOTED  
☐ CNTD SMEARS < 20dpm/100cm<sup>2</sup> ALPHA EXCEPT AS NOTED  
 LARGE AREA SMEAR MEDIUM USED ☐ TACKY CLOTH ☐ MASSLINN ☐ OTHER \_\_\_\_\_



REMARKS: All air samples 10 ft<sup>3</sup> 5 min. at 2cfm  
 Dose Rate Range \_\_\_\_\_ mRem/Hr  
 Iodine cartridge n.cpm = 1000  
 Part. cartridge n.cpm = 150

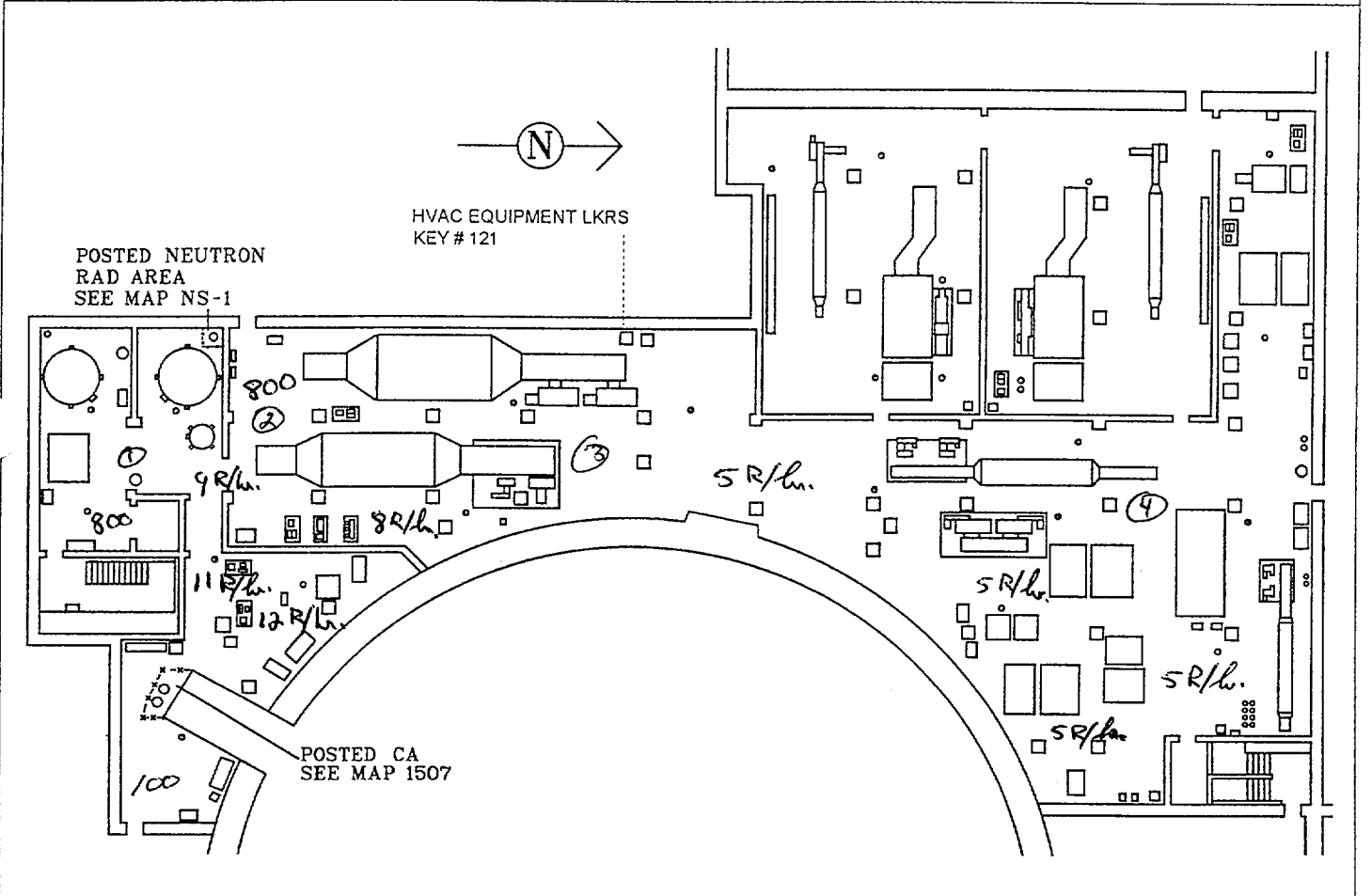
DOSE		1045-1059	
SURVEYED BY: <i>HPTech</i>	BADGE NO: 003	TIME/DATE: 10-3-01	REVIEWED BY: _____
		BADGE NO: _____	DATE: _____



CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

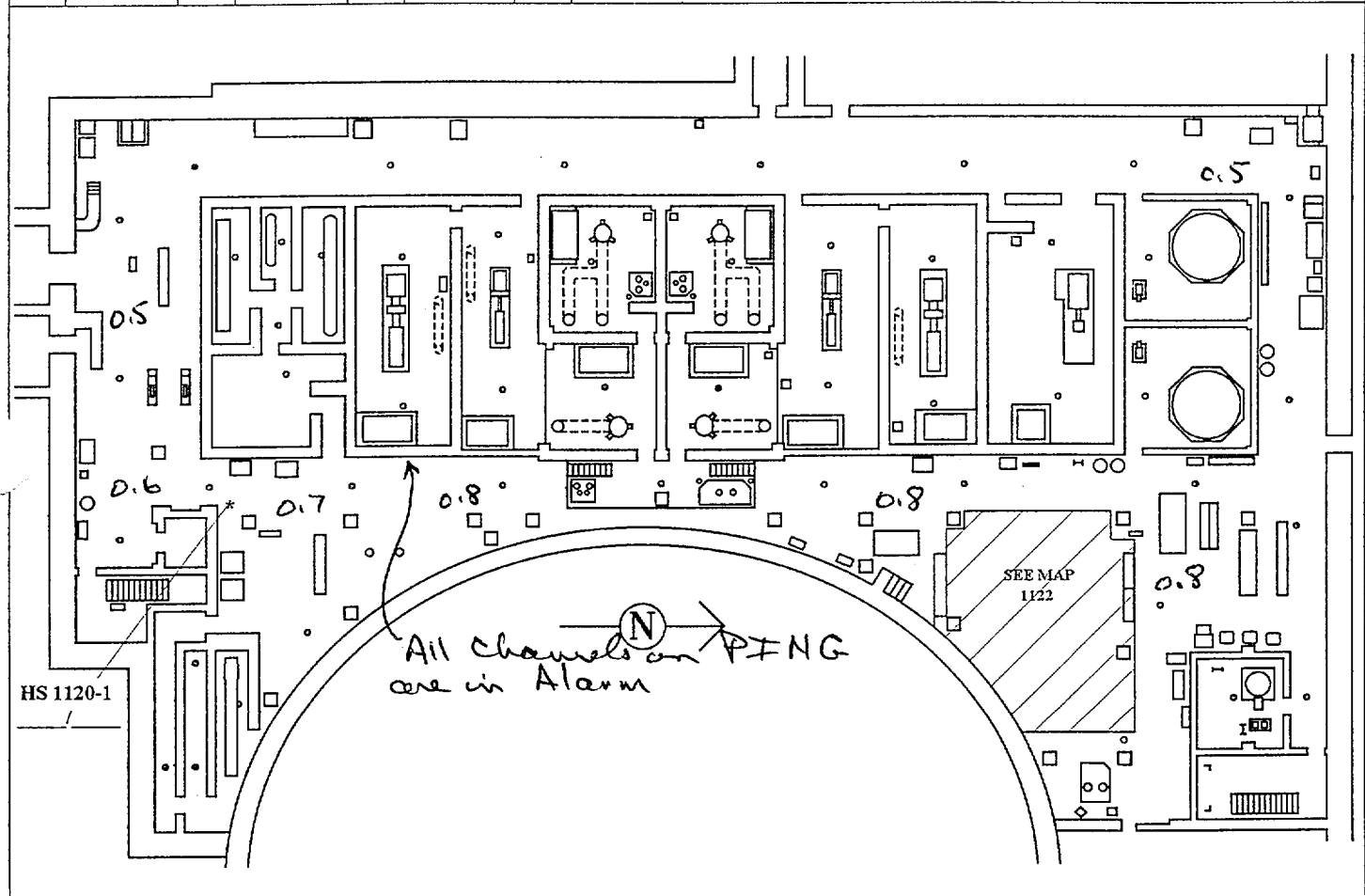
LOCATION: AUXILIARY BUILDING 2047 GENERAL AREA						MAP NO: AB-2047	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO: 01-911		INST:		LEGEND ① = SMEAR ② = LARGE AREA SMEAR ③ = BETA mrem/hr No. = GAMMA mrem/hr * = CONTACT/12" ④ = NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:					
<input checked="" type="checkbox"/> OTHER Drill							
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA	
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM
1	1K						
2	2.5K						
3	2K						
4	1.5K						

☒ ALL SMEARS < 1000dpm/100cm<sup>2</sup> EXCEPT AS NOTED  
☒ ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED  
☐ ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED  
☐ NO HOT PARTICLES FOUND EXCEPT AS NOTED  
☐ CNTD SMEARS < 20dpm/100cm<sup>2</sup> ALPHA EXCEPT AS NOTED  
 LARGE AREA SMEAR MEDIUM USED ☐ TACKY CLOTH ☐ MASSLINN  
☐ OTHER \_\_\_\_\_



REMARKS			
Dose Rate Range _____ mRem/Hr All air samples 10 ft <sup>3</sup> 5 min. at 2 cfm Iodine cartridge n. cpm = 7500 Pant cartridge n. cpm = 250			
DOSE			
1045-1059			
IRVEYED BY:	BADGE NO:	TIME/DATE:	REVIEWED BY:
HPTech	003	10-3-01	
19 AUG 2000			

LOCATION: AUXILIARY BUILDING 1974' GENERAL AREA								MAP NO: AB-1974	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB <input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER <u>Drill</u>				RWP/WAD NO:  <u>01-911</u>		INST:		LEGEND ① = SMEAR Ⓐ = LARGE AREA SMEAR Ⓑ = BETA mrad/hr No. = GAMMA mrem/hr "/= CONTACT/12" ⊞ = NEUTRON mrem/hr	
						ID. NO:			
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
								☑ ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
								<input type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED	
								<input type="checkbox"/> ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED	
								<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
								<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN	
								<input type="checkbox"/> OTHER _____	



Iodine cartridge n. cpm = 100.  
Paul. cartridge n. cpm = 400

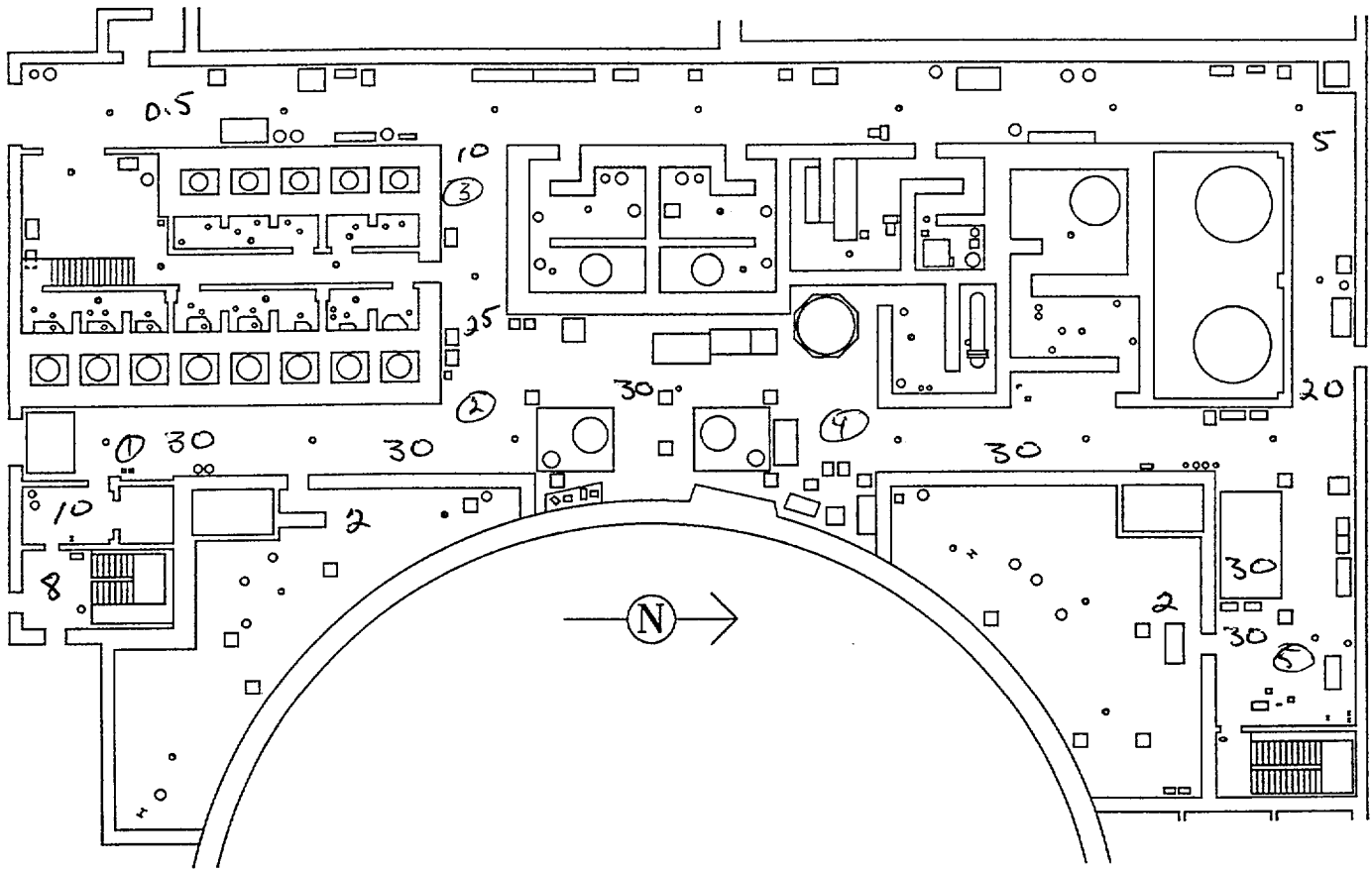
1100-1114

DATE:

HP Tech 003

10-3-01

LOCATION: AUXILIARY BUILDING 2000' GENERAL AREA								MAP NO: AB-2000	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB <input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER <u>Drill</u>				RWP/WAD NO: 01-911		INST:		LEGEND ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No. = GAMMA mrem/hr "/ = CONTACT/12" ⊕ = NEUTRON mrem/hr	
						ID. NO:			
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	200							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
2	200							<input type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED	
4	150							<input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED	
5	150							<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
								<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN	
								<input type="checkbox"/> OTHER _____	



All air samples 10 ft<sup>3</sup> 5 min at 2 cfm  
Iodine cartridge n. cpm = 1000  
Part. cartridge n. cpm = 100

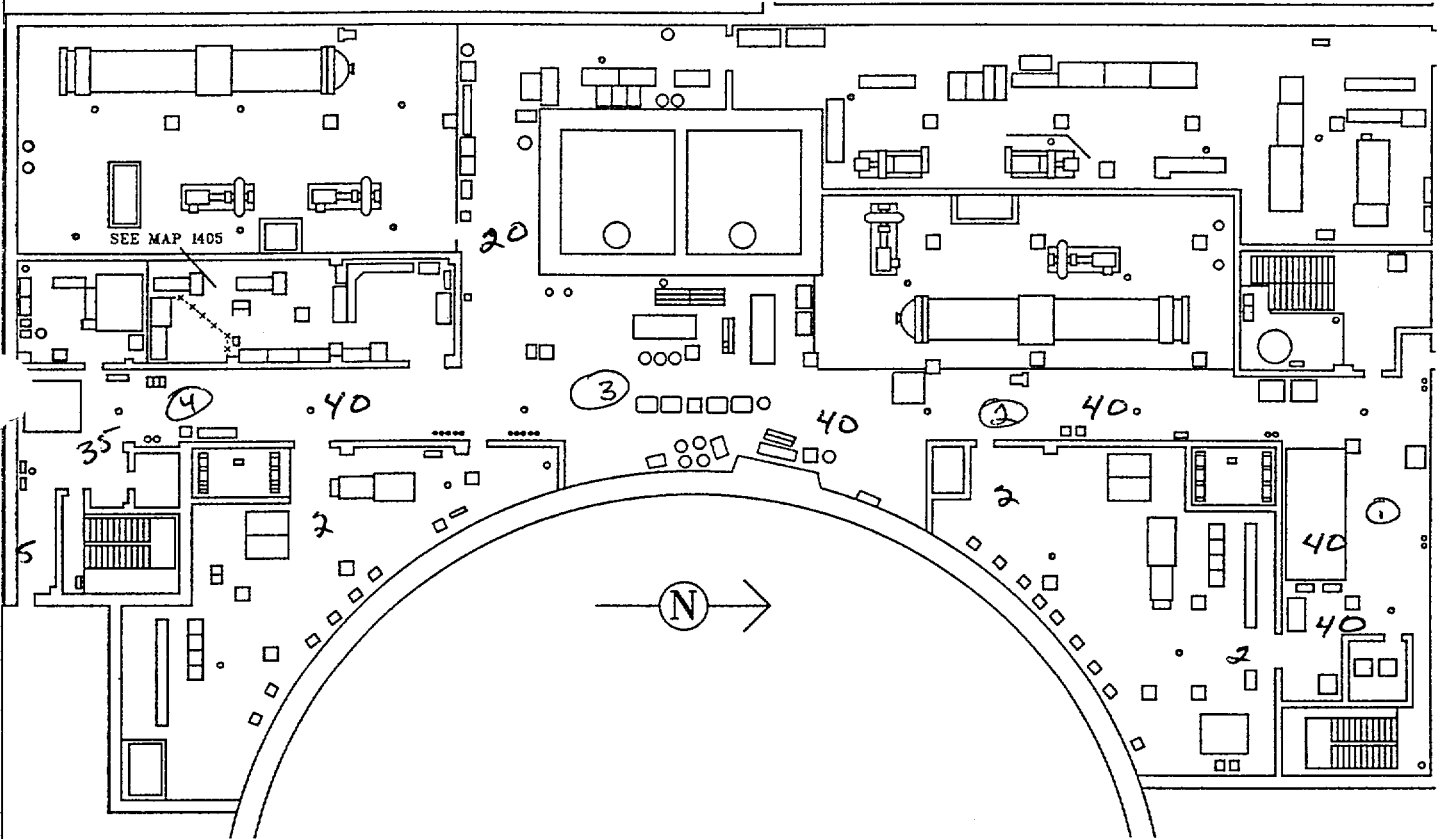
DATE:

103-01

H210.00001

CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

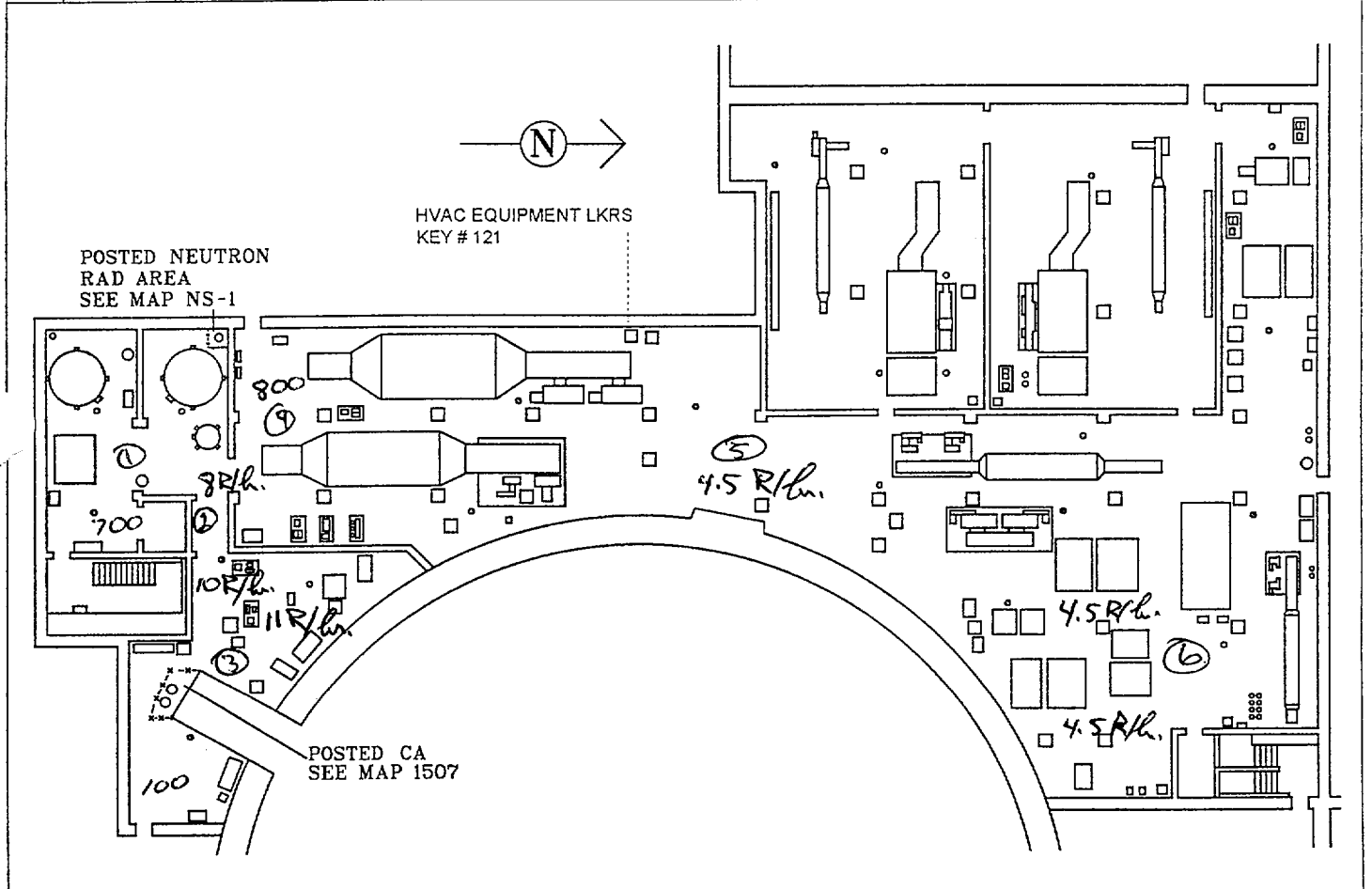
LOCATION: AUXILIARY BUILDING 2026 GENERAL AREA								MAP NO: AB-2026	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB				RWP/WAD NO: 01-911		INST:		<b>LEGEND</b> ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrem/hr No. = GAMMA mrem/hr * = CONTACT/12" ② = NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE				ID. NO:					
<input checked="" type="checkbox"/> OTHER <i>Drill</i>									
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	200							<input checked="" type="checkbox"/> ALL SMEARS < 1000 dpm/100cm <sup>2</sup> EXCEPT AS NOTED  <input checked="" type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED <input type="checkbox"/> ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED  <input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED  <input type="checkbox"/> CNTD SMEARS < 20 dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER	
2	350								
3	250								
4	300								



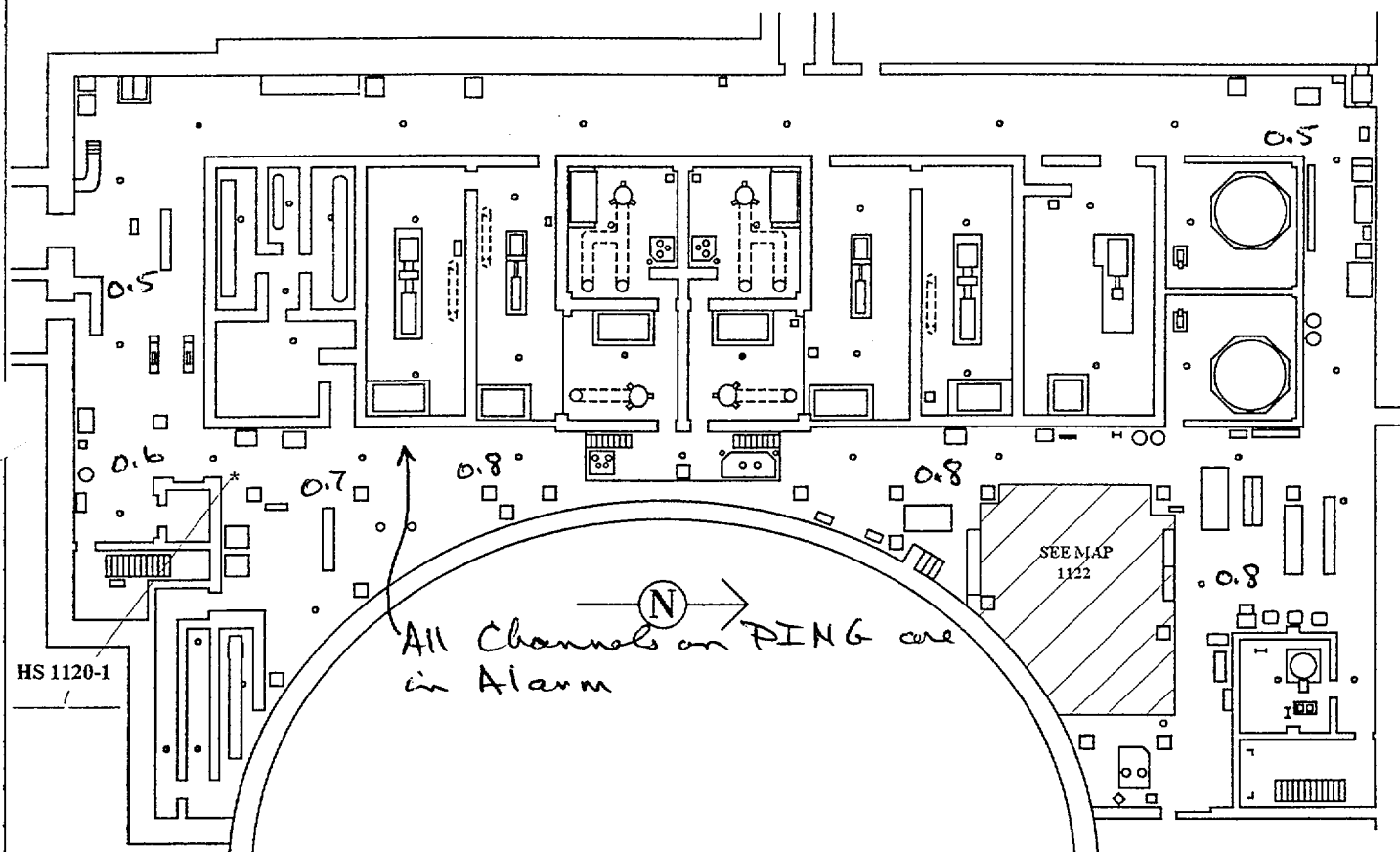
REMARKS			
Dose Rate Range		All air samples 10 ft 3 5 min. at 2 cfm	
_____ mRem/Hr		Iodine cartridge n.cpm = 1500	
		Part. cartridge n.cpm = 200	
DOSE			
1100-1114			
REVIEWED BY:	BADGE NO:	TIME/DATE:	REVIEWED BY:
H/PTech	003	10-3-01	
DATE:		DATE:	

CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2047 GENERAL AREA						MAP NO: AB-2047	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO: 01-911		INST:		<b>LEGEND</b> ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" ⑤ = NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:					
<input checked="" type="checkbox"/> OTHER							
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	500					<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED  <input checked="" type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED <input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED  <input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED  <input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER	
2	5K						
3	7K						
4	2K						
5	1.5K						



REMARKS			
Dose Rate Range _____ mRem/Hr All air samples 10ft±3 5min. at 2cfm Iodine cartridge n. cpm = 10,000 Pant cartridge n. cpm = 300			
DOSE			
1100-1114			
IRVEYED BY:	BADGE NO:	TIME/DATE:	REVIEWED BY: BADGE NO: DATE:
HP Tech	003	10-3-01	

[illegible]

REMARKS

### Dose Rate Range

mRem/Hr

All air samples  $10 \text{ ft}^3$  5 min at 2 cfm

Iodine cartridge n. cpm = 100  
Pauli cartridge n. cpm = < 100

## DOSE

IRVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE: \_\_\_\_\_

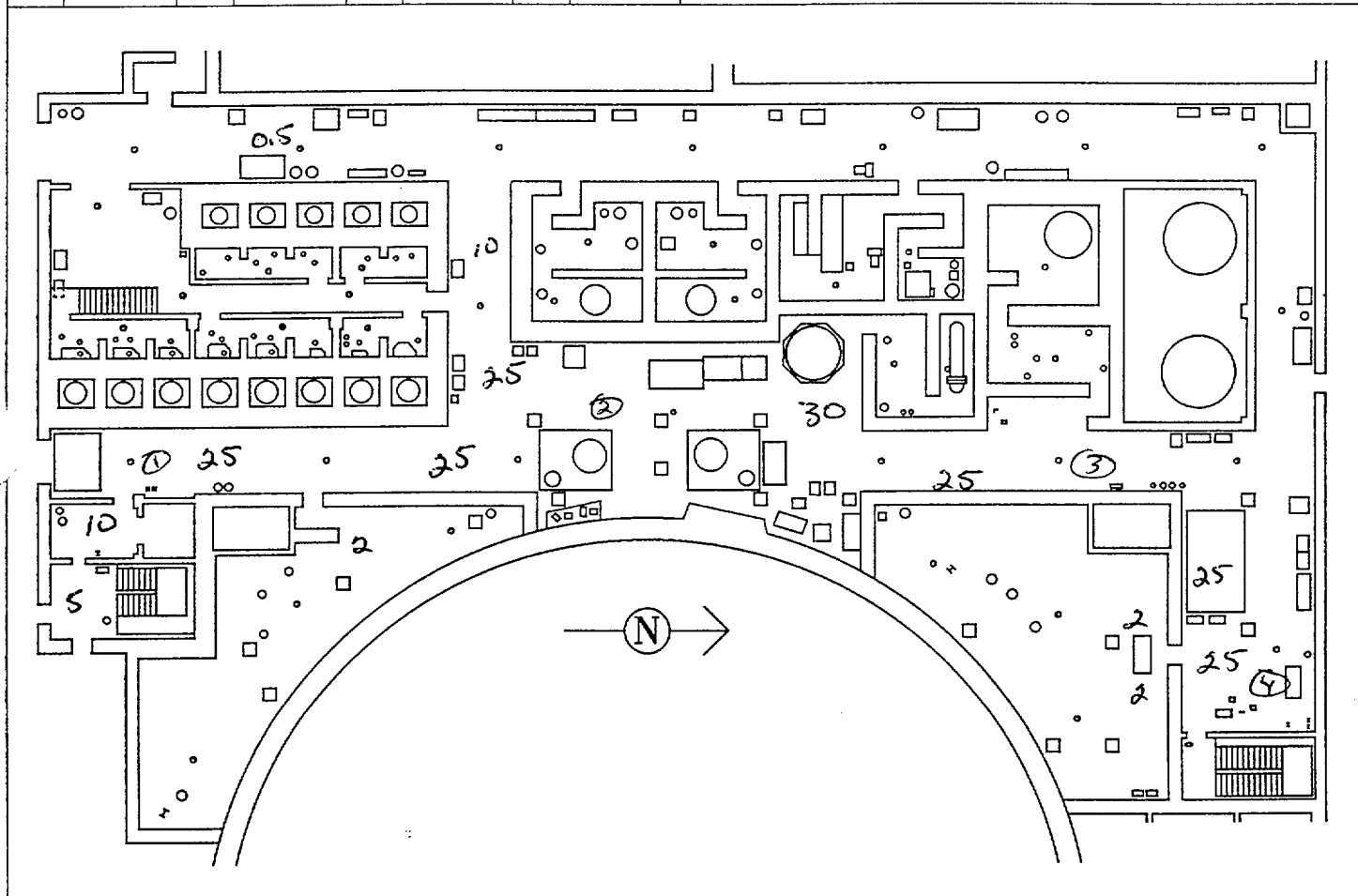
HTech 003

10-3-01

19 AUG 2000

H210.00001

LOCATION: AUXILIARY BUILDING 2000' GENERAL AREA								MAP NO: AB-2000	
TYPE: <input type="checkbox"/> ROUTINE		<input type="checkbox"/> PRE JOB		RWP/WAD NO:		INST:		LEGEND <input checked="" type="checkbox"/> = SMEAR <input checked="" type="checkbox"/> = LARGE AREA SMEAR <input checked="" type="checkbox"/> = BETA mrad/hr No. = GAMMA mrem/hr % = CONTACT/12" <input checked="" type="checkbox"/> = NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON		<input type="checkbox"/> JOB COVERAGE		ID. NO:					
<input checked="" type="checkbox"/> OTHER Drill				01-911					
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	250							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
2	200							<input type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED	
3	200							<input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED	
4	150							<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
								<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN	
								<input type="checkbox"/> OTHER	



All air samples 10 ft<sup>3</sup> 5 min at 2 cfm  
Iodine cartridge n. cpm = 1000  
Part. cartridge n. cpm = 100

## DOSE

1115-1129

DATE:

HP Tech

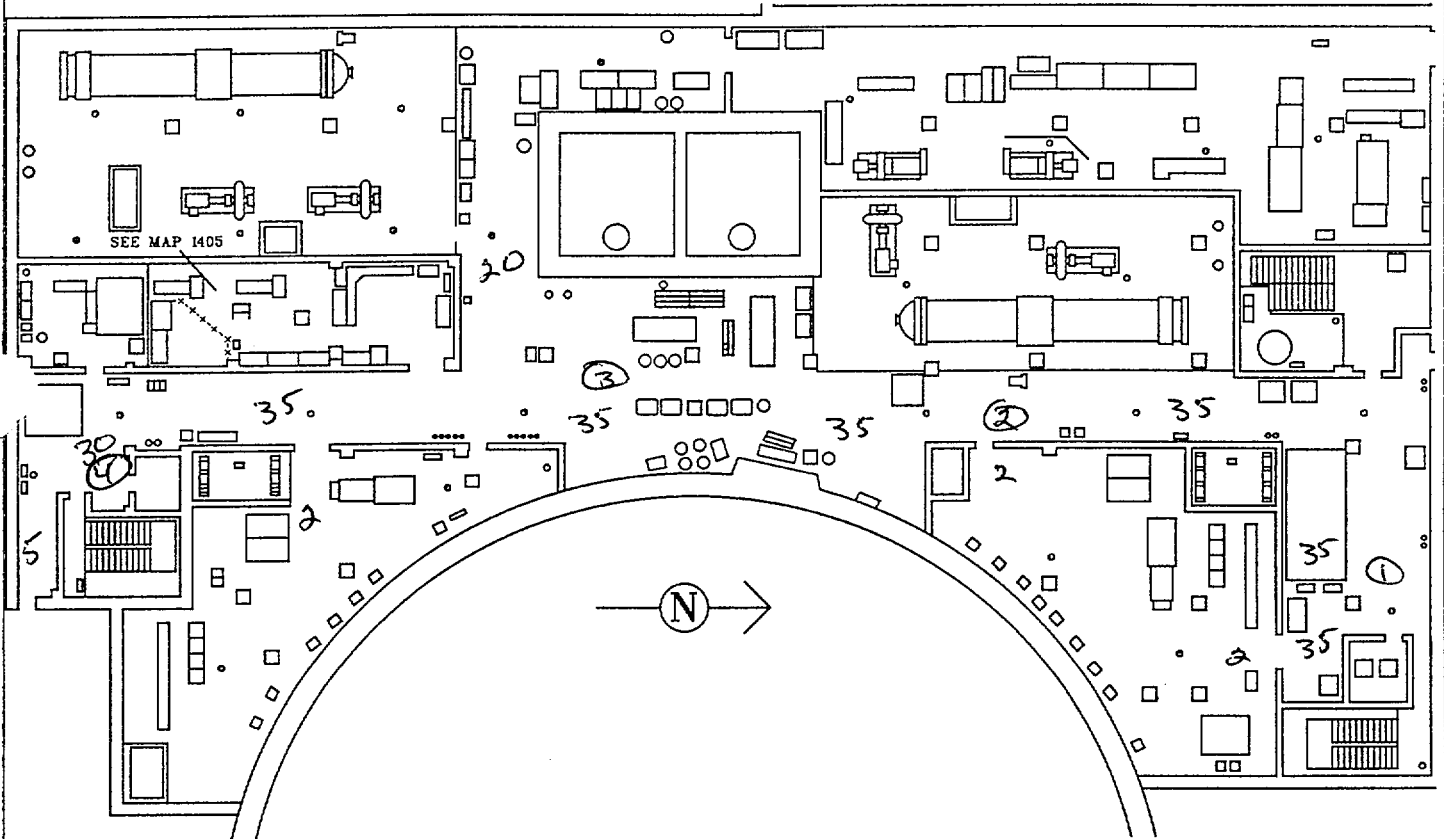
003

10-3-01

19 AUG 2000

H210.00001

LOCATION: AUXILIARY BUILDING 2026 GENERAL AREA								MAP NO: AB-2026	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB <input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER <u>Dwell</u>				RWP/WAD NO: <u>01-911</u>		INST:		LEGEND ① = SMEAR Ⓐ = LARGE AREA SMEAR Ⓑ = BETA mrad/hr No. = GAMMA mrem/hr "/= CONTACT/12" Ⓔ = NEUTRON mrem/hr	
ID. NO:									
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
<u>1</u>	<u>250</u>							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
<u>2</u>	<u>300</u>							<input checked="" type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED	
<u>3</u>	<u>300</u>							<input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED	
<u>4</u>	<u>300</u>							<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
								<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN	
								<input type="checkbox"/> OTHER _____	



All air samples 10 ft<sup>3</sup> 5 min. at 2 cfm  
Iodine cartridge n. cpm = 1500  
Part. cartridge n. cpm = 150

DATE: \_\_\_\_\_

10-3-01

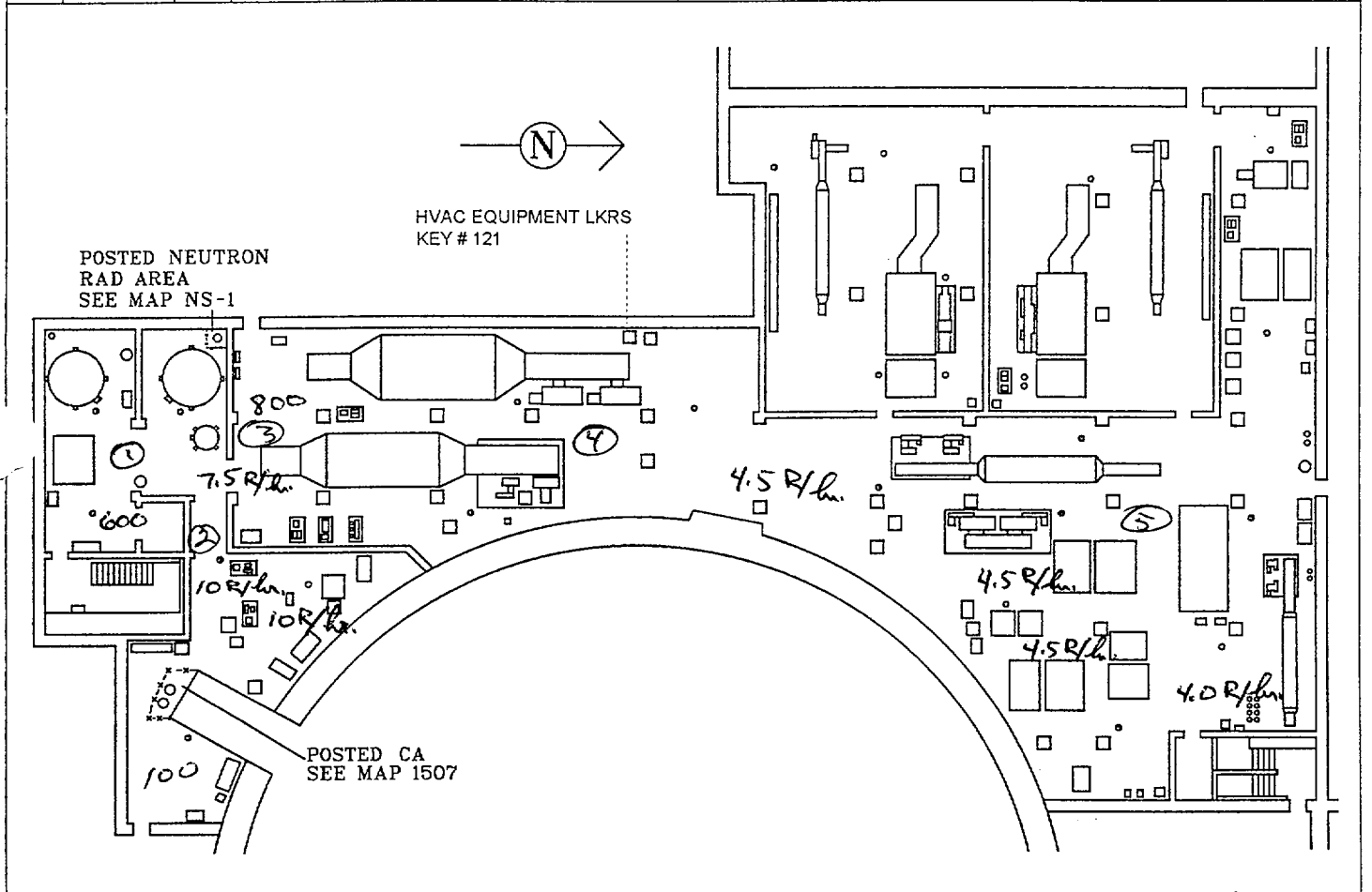


CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2047 GENERAL AREA				MAP NO: AB-2047	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO: 01-911		INST:	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:		<b>LEGEND</b> ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No. = GAMMA mrem/hr */ = CONTACT/12" ⑤ = NEUTRON mrem/hr	
<input checked="" type="checkbox"/> OTHER <i>D-111</i>					

ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA	
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM
1	700						
2	5K						
3	2.5K						
4	2K						
5	1000						

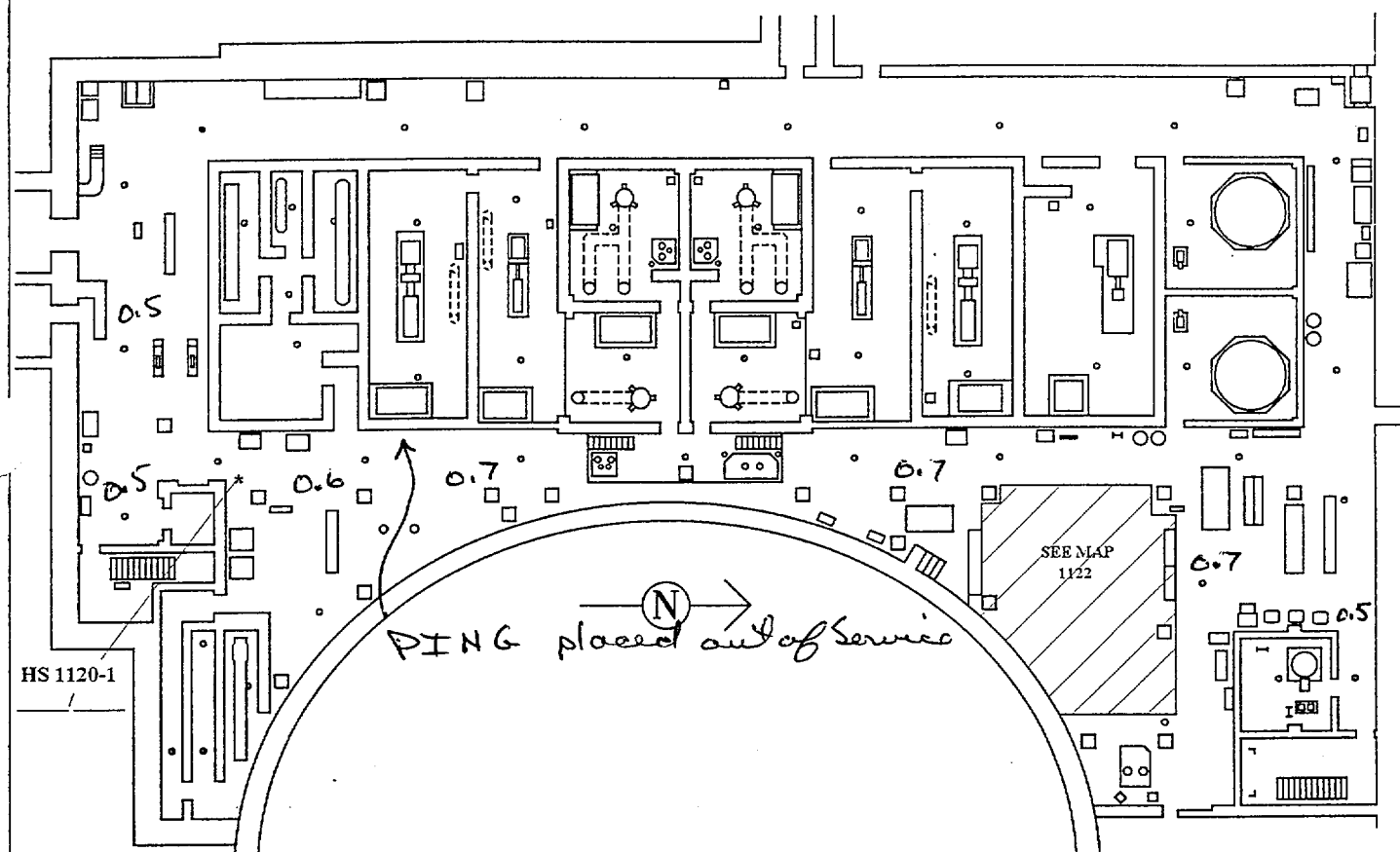
☒ ALL SMEARS < 1000 dpm/100cm<sup>2</sup> EXCEPT AS NOTED  
☒ ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED  
☐ ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED  
☐ NO HOT PARTICLES FOUND EXCEPT AS NOTED  
☐ CNTD SMEARS < 20 dpm/100cm<sup>2</sup> ALPHA EXCEPT AS NOTED  
 LARGE AREA SMEAR MEDIUM USED ☐ TACKY CLOTH ☐ MASSLINN ☐ OTHER \_\_\_\_\_



REMARKS Dose Rate Range _____ mRem/Hr All air samples 10 ft 3 5 min. at 2 of m Iodine cartridge n. cpm = 10,000 Pant cartridge n. cpm = 350			
DOSE _____			
1115-1129			
SURVEYED BY: <i>HPTech</i> BADGE NO: 003 TIME/DATE: 10-3-01	REVIEWED BY: _____ BADGE NO: _____ DATE: _____		

19 AUG 2000

H210.0001

[illegible]

mRem/Hr

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm

Iodine cartridge n. cpm =  $< 100$

Paul. cartridge n. cpm =  $\leq 100$

### DOSE

SURVEYED BY:

**BADGE NO:**

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE:

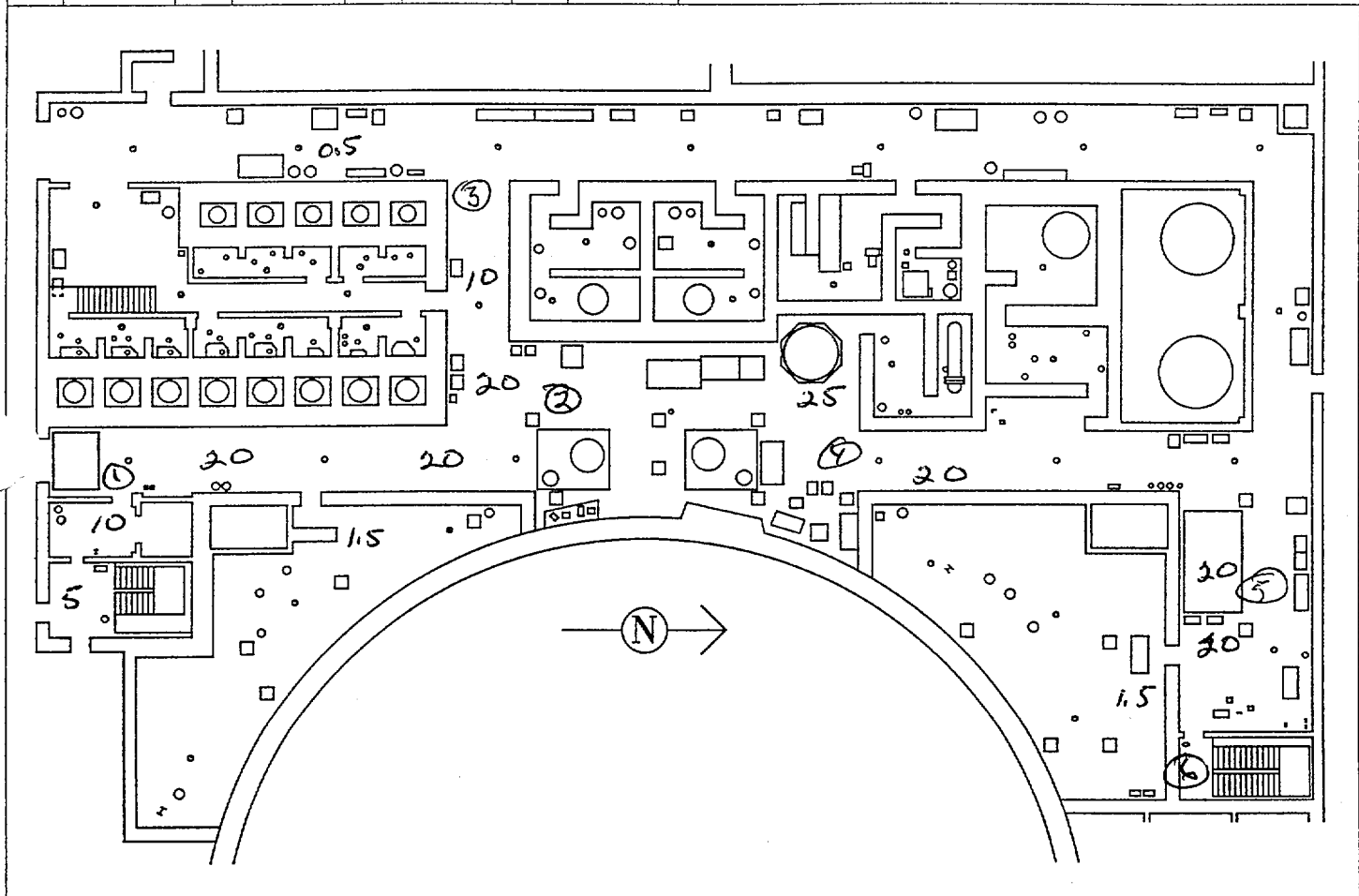
HF Tech 003

10-3-01

19 AUG 2000

H210.00001

LOCATION: AUXILIARY BUILDING 2000 GENERAL AREA								MAP NO: AB-2000	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB				RWP/WAD NO:		INST:		LEGEND ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No. = GAMMA mrem/hr */ = CONTACT/12" <input checked="" type="checkbox"/> NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE				01-911		ID. NO:			
<input checked="" type="checkbox"/> OTHER Drill									
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	300							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
2	250							<input type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED	
4	250							<input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED	
5	250							<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
								<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN	
								<input type="checkbox"/> OTHER _____	



REMARKS

### Dose Rate Range

mRem/Hr

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm  
Iodine cartridge n. cpm = 750  
Part. cartridge n. cpm = <100

## DOSE

REVIEWED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE:

HP Tech

003

10-3-01

1130-1144

19 AUG 2000

H210.0001

<b>LOCATION:</b> AUXILIARY BUILDING 2026 GENERAL AREA				<b>MAP NO:</b> AB-2026	
<b>TYPE:</b> <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		<b>RWP/WAD NO:</b>		<b>INST:</b>	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		01-911		ID. NO:	
<input checked="" type="checkbox"/> OTHER <u>Dwell</u>					
<b>ALPHA/BETA</b>		<b>ALPHA/BETA</b>		<b>ALPHA/BETA</b>	
<b>SM. #</b>	<b>DPM/CPM</b>	<b>SM. #</b>	<b>DPM/CPM</b>	<b>SM. #</b>	<b>DPM/CPM</b>
1	300				
2	400				
3	450				
4	450				

☒ ALL SMEARS < 1000dpm/100cm<sup>2</sup> EXCEPT AS NOTED

☒ ALL RADIATION LEVELS < 0.5 mrem/hr  
EXCEPT AS NOTED

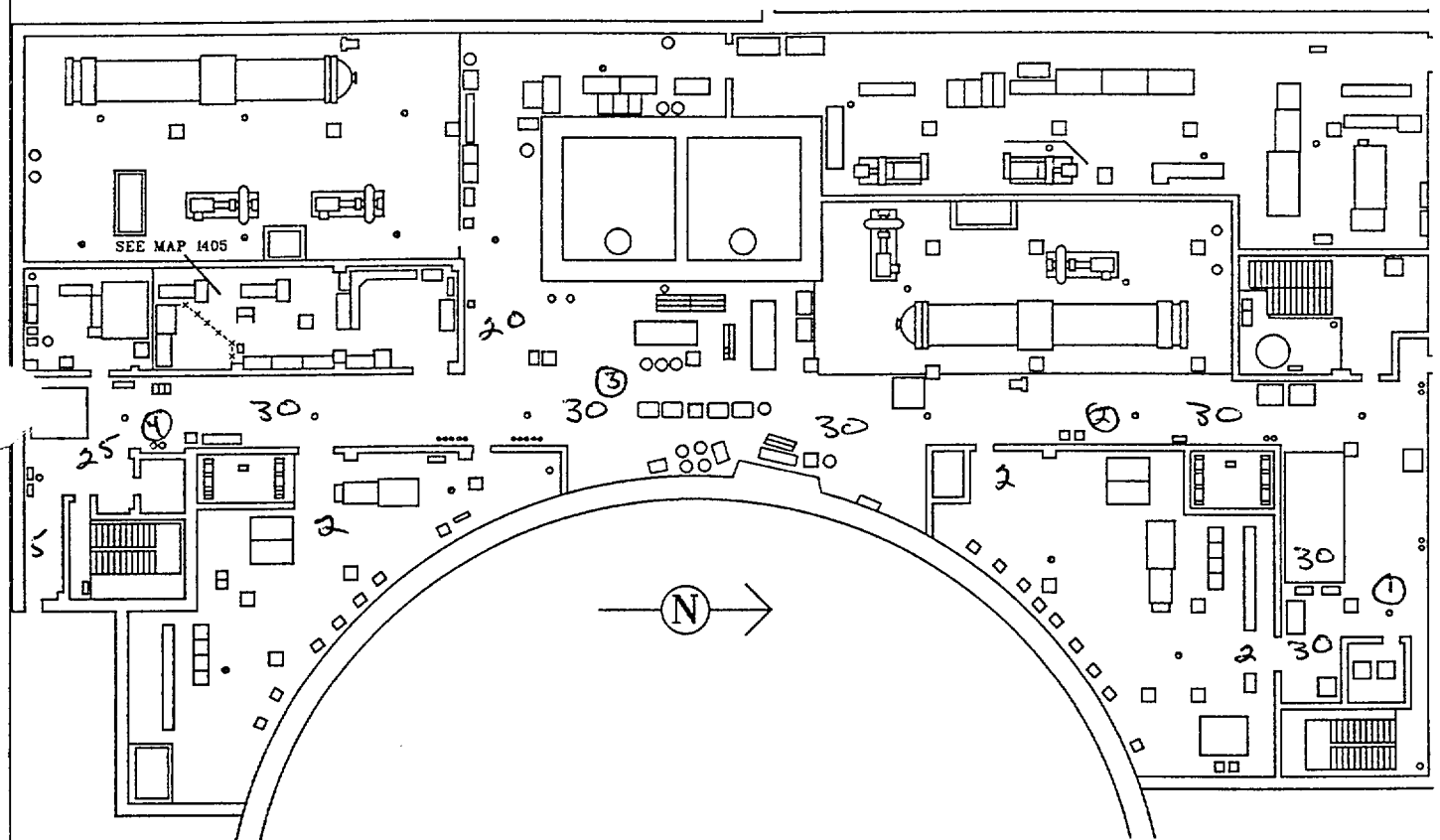
☐ ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED

☐ NO HOT PARTICLES FOUND EXCEPT AS NOTED

☐ CNTD SMEARS < 20dpm/100cm<sup>2</sup> ALPHA EXCEPT AS NOTED

LARGE AREA SMEAR MEDIUM USED ☐ TACKY CLOTH ☐ MASSLINN  
☐ OTHER \_\_\_\_\_

**LEGEND**  
 ① = SMEAR  
 ④ = LARGE AREA SMEAR  
 ② = BETA mrad/hr  
 No. = GAMMA mrem/hr  
 \*/ = CONTACT/12"  
☒ NEUTRON mrem/hr



All air samples 10 ft<sup>3</sup> 5 min. at 2 cfm  
 Iodine cartridge n. cpm = 1500  
 Part. cartridge n. cpm = 100

10-3-a 1130  
HPT ~~1030~~ -1144

DATE:

HP Tech

003

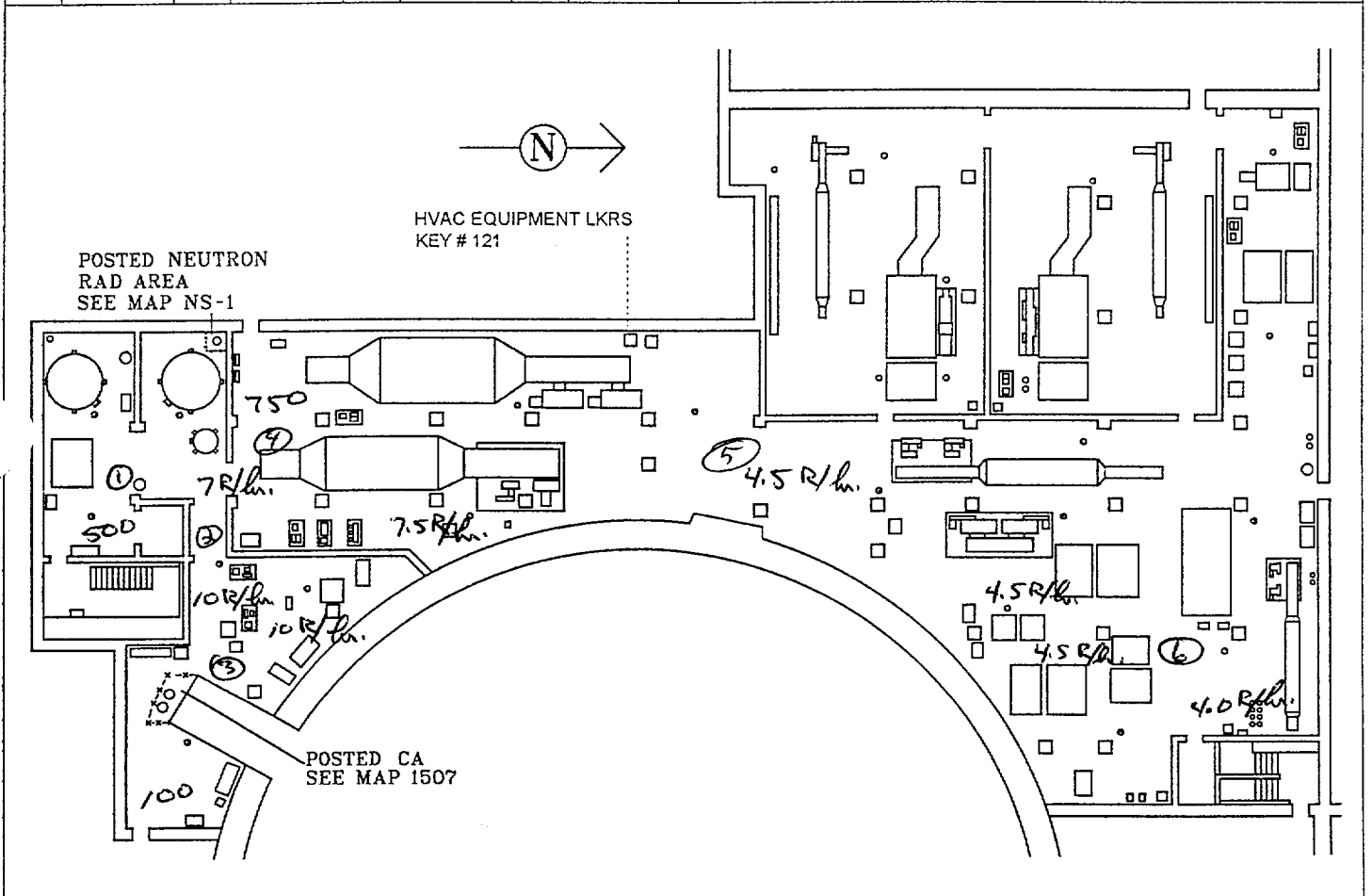
10-3-01

CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

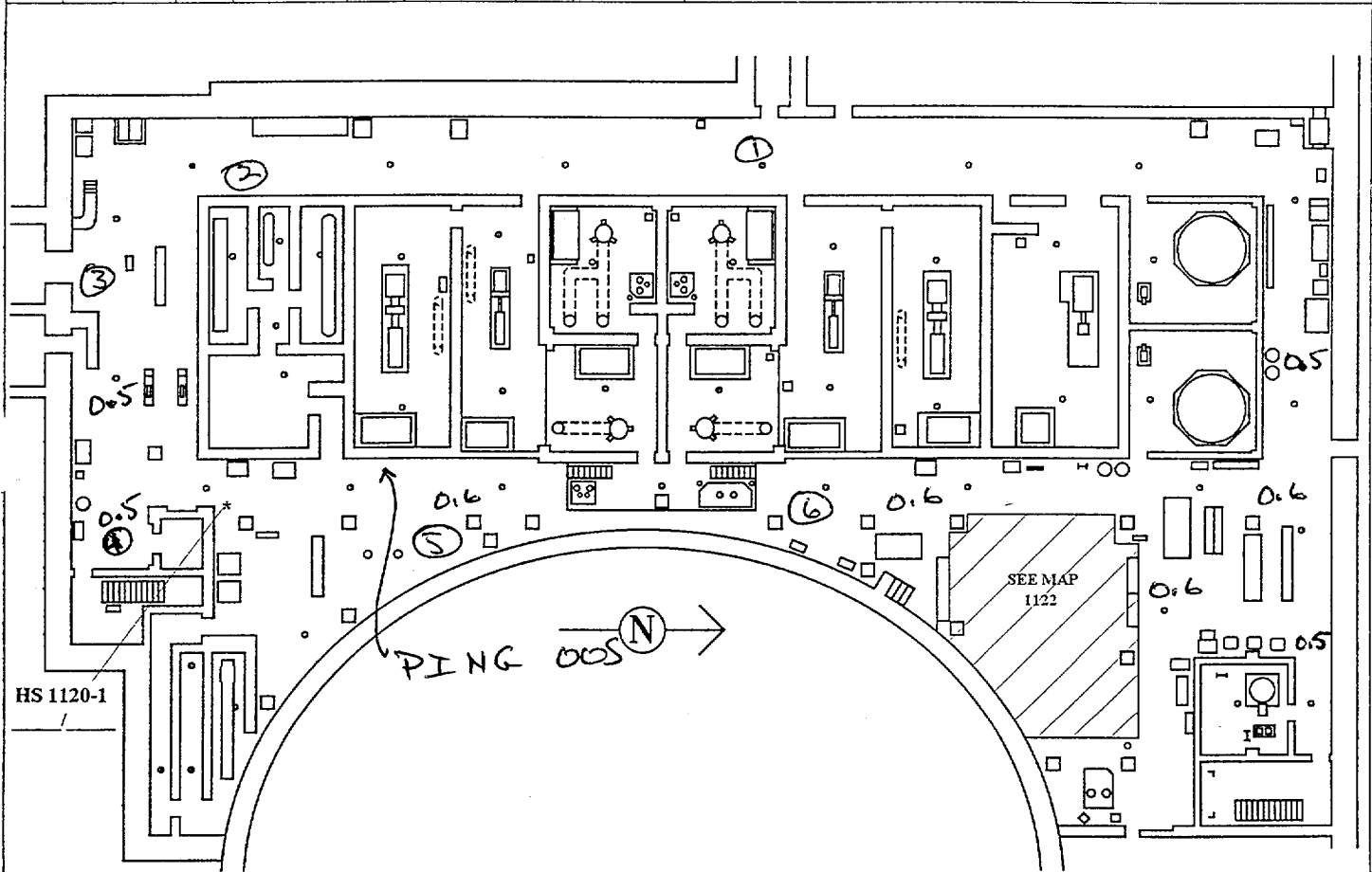
LOCATION: AUXILIARY BUILDING 2047 GENERAL AREA				MAP NO: AB-2047	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO: 01-911		INST:	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:		<b>LEGEND</b> ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No = GAMMA mrem/hr 7 = CONTACT/12" ⑤ = NEUTRON mrem/hr	
<input checked="" type="checkbox"/> OTHER <i>D-111</i>					

ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA	
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM
1	1K						
2	5K						
3	75K						
4	4K						
5	3K						
6	2.5K						

☒ ALL SMEARS < 1000dpm/100cm<sup>2</sup> EXCEPT AS NOTED  
☒ ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED  
☐ ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED  
☐ NO HOT PARTICLES FOUND EXCEPT AS NOTED  
☐ CNTD SMEARS < 20dpm/100cm<sup>2</sup> ALPHA EXCEPT AS NOTED  
 LARGE AREA SMEAR MEDIUM USED ☐ TACKY CLOTH ☐ MASSLINN ☐ OTHER \_\_\_\_\_



REMARKS			
Dose Rate Range _____ mRem/Hr All air samples 10ft±3 5min. at 2cfm Iodine cartridge n. cpm = 9500 Pant cartridge n. cpm = 300			
DOSE			
1130-1144			
IRVEYED BY:	BADGE NO:	TIME/DATE:	REVIEWED BY:
HPTech	003	10-3-01	

[illegible]

REMARKS

### Dose Rate Range

**mRem/Hr**

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm

Iodine cartridge n. cpm =  $< 100$

Pauli cartridge n. cpm = 100

## **DOSE**

REVIEWED BY:

BADGE NO:

TIME/DATE:

1145 - 1159

REVIEWED BY:

BADGE NO:

DATE: \_\_\_\_\_

HTech 003

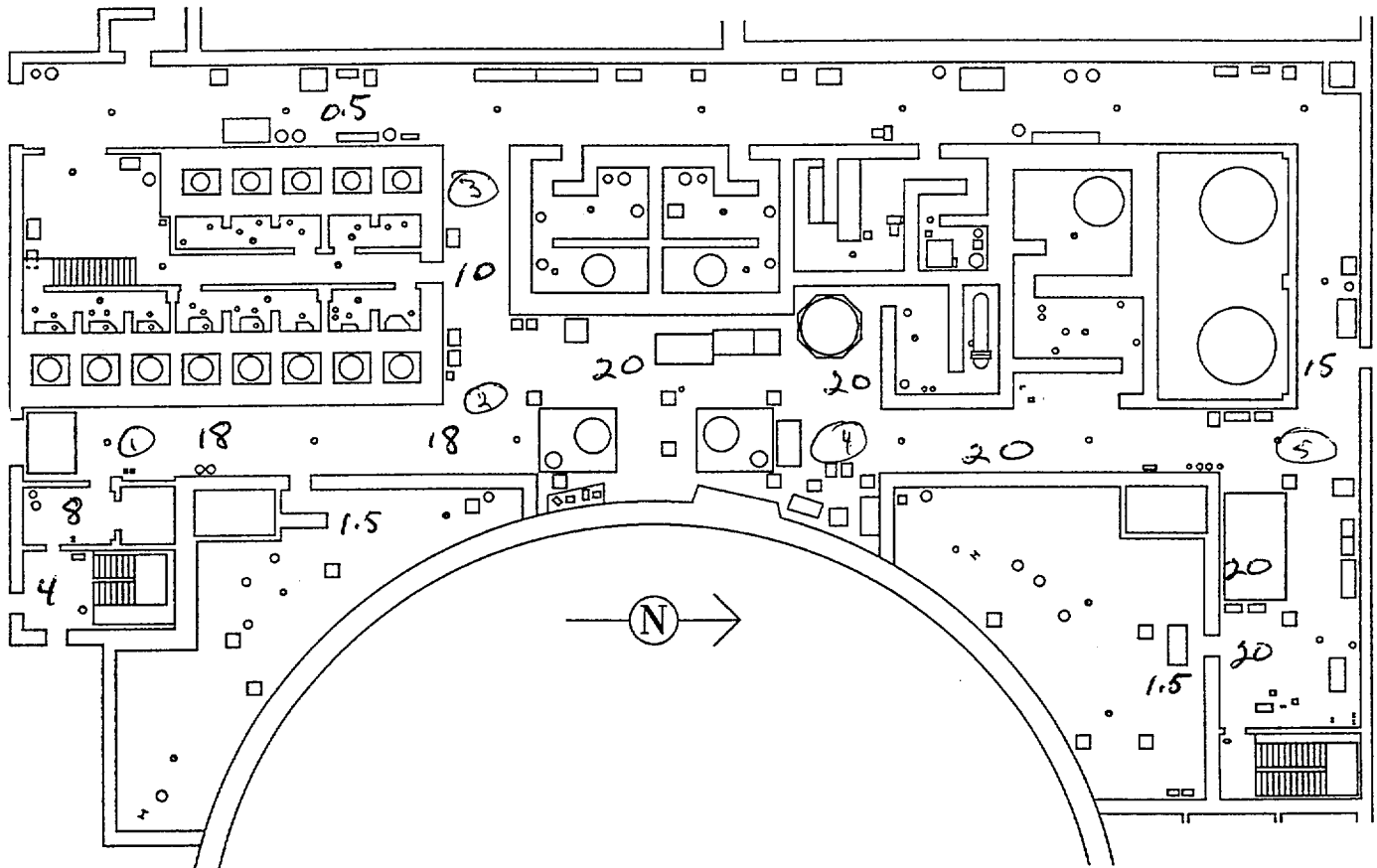
10-3-01

19 AUG 2000

H210.0001

## CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2000 GENERAL AREA						MAP NO: AB-2000	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO: 01-911		INST:		LEGEND ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" ⑤ = NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:					
<input checked="" type="checkbox"/> OTHER Drill							
ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA		
SM. # DPM/CPM	SM. # DPM/CPM	SM. # DPM/CPM	SM. # DPM/CPM	SM. # DPM/CPM	SM. # DPM/CPM		
1 350						<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED  <input type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED <input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED  <input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED  <input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____	
2 350							
4 350							
5 350							



## REMARKS

## Dose Rate Range

mRem/Hr

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm  
 Iodine cartridge n. cpm = 700  
 Pant. cartridge n. cpm = > 100

DOSE

1145-1159

IRVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE:

HP Tech

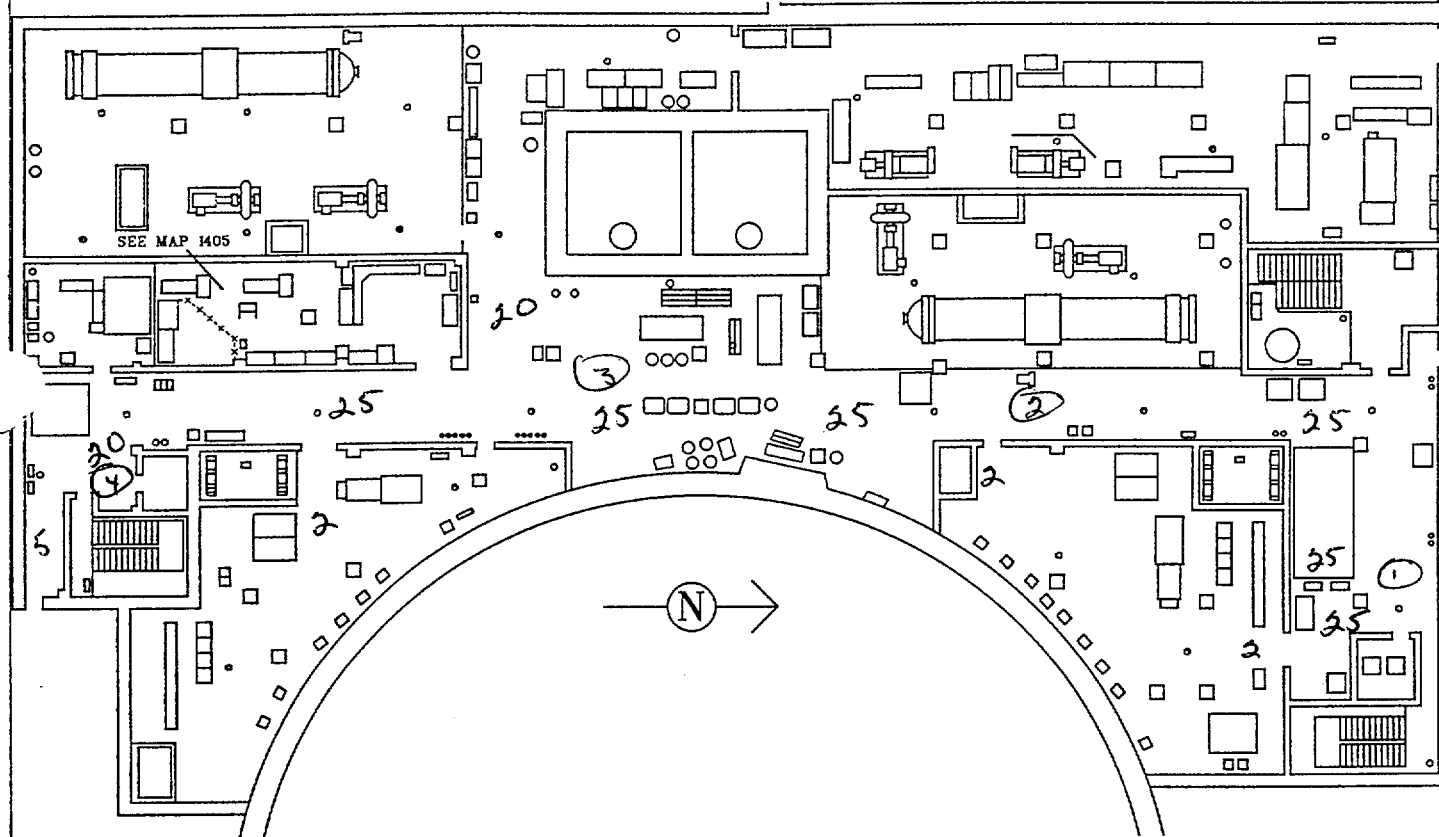
003

10-3-01

19 AUG 2000

H210.0001

LOCATION: AUXILIARY BUILDING 2026 GENERAL AREA										MAP NO: AB-2026	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB				RWP/WAD NO:				INST:			
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE				ID. NO:				LEGEND ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" ③ = NEUTRON mrem/hr			
<input checked="" type="checkbox"/> OTHER <u>Dwell</u>											
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA					
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM				
1	300										
2	350										
3	350										
4	400										
								<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED			
								<input checked="" type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED			
								<input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED			
								<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED			
								<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED			
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____			



### Dose Rate Range

mRem/Hr

All air samples	10 ft <sup>3</sup>	5 min. at 2 cfm
Iodine cartridge	n.cpm = 1000	
Part. cartridge	n.cpm = 100	

### DOSE

IRVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE: \_\_\_\_\_

HP Tech

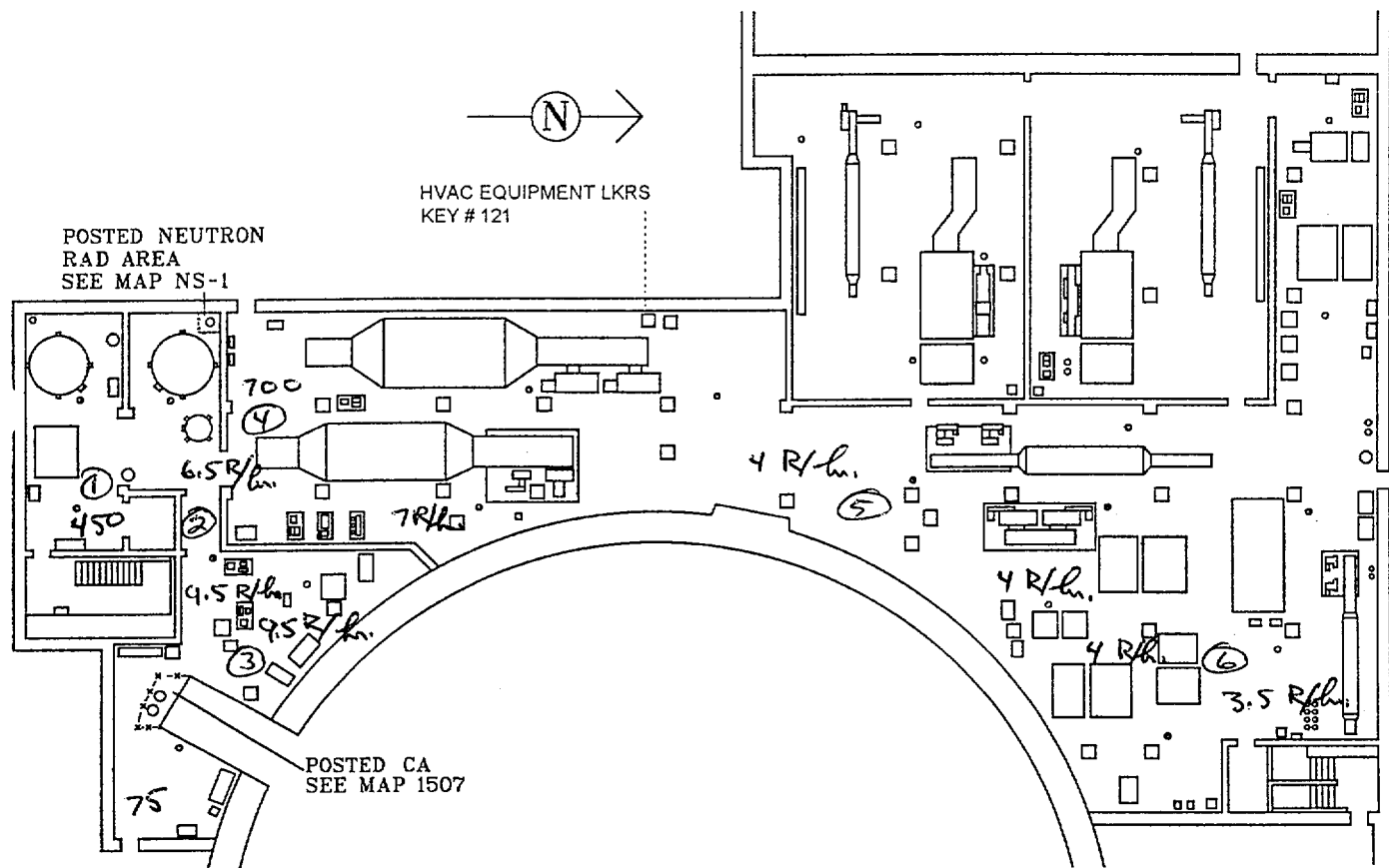
003

10-3-01

18 AUG 2000

H210.0001



[illegible]

### Dose Rate Range

mRem/Hr

All air samples 10 ft<sup>3</sup> 5 min. at 2 cfm  
Iodine cartridge n. cpm = 9000  
Part cartridge n. cpm = 250

### DOSE

REVIEWED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE: \_\_\_\_\_

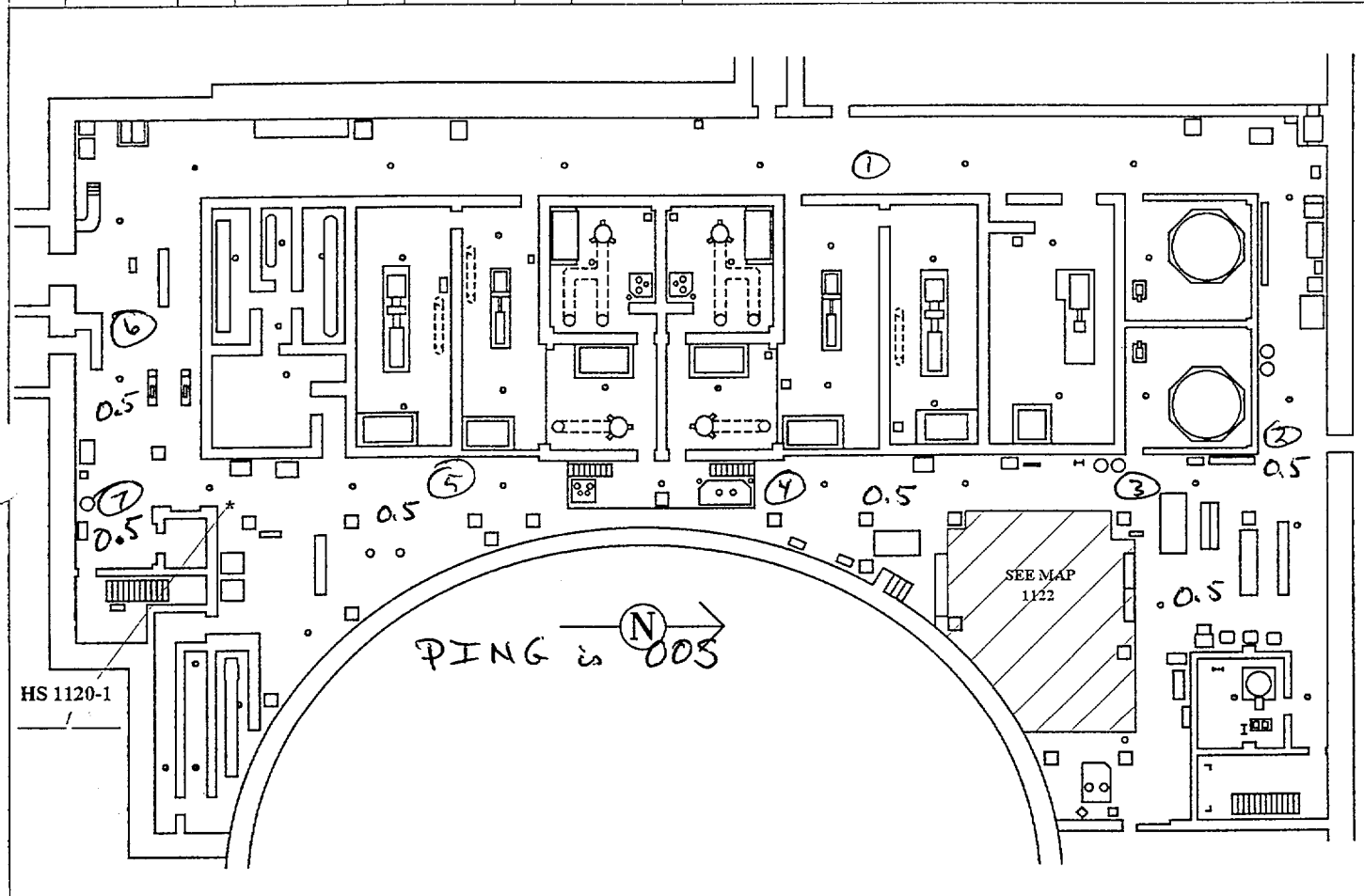
HP Tech

003

10-3-01

19 AUG 2000

H210.0001

[illegible][illegible]

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm

Iodine cartridge n. cpm = < 100  
 Pant. cartridge n. cpm = < 100

### DOSE

1200-1214

**SURVEYED BY:**

**BADGE NO:**

TIME/DATE:

REVIEWED BY:

BADGE NO:

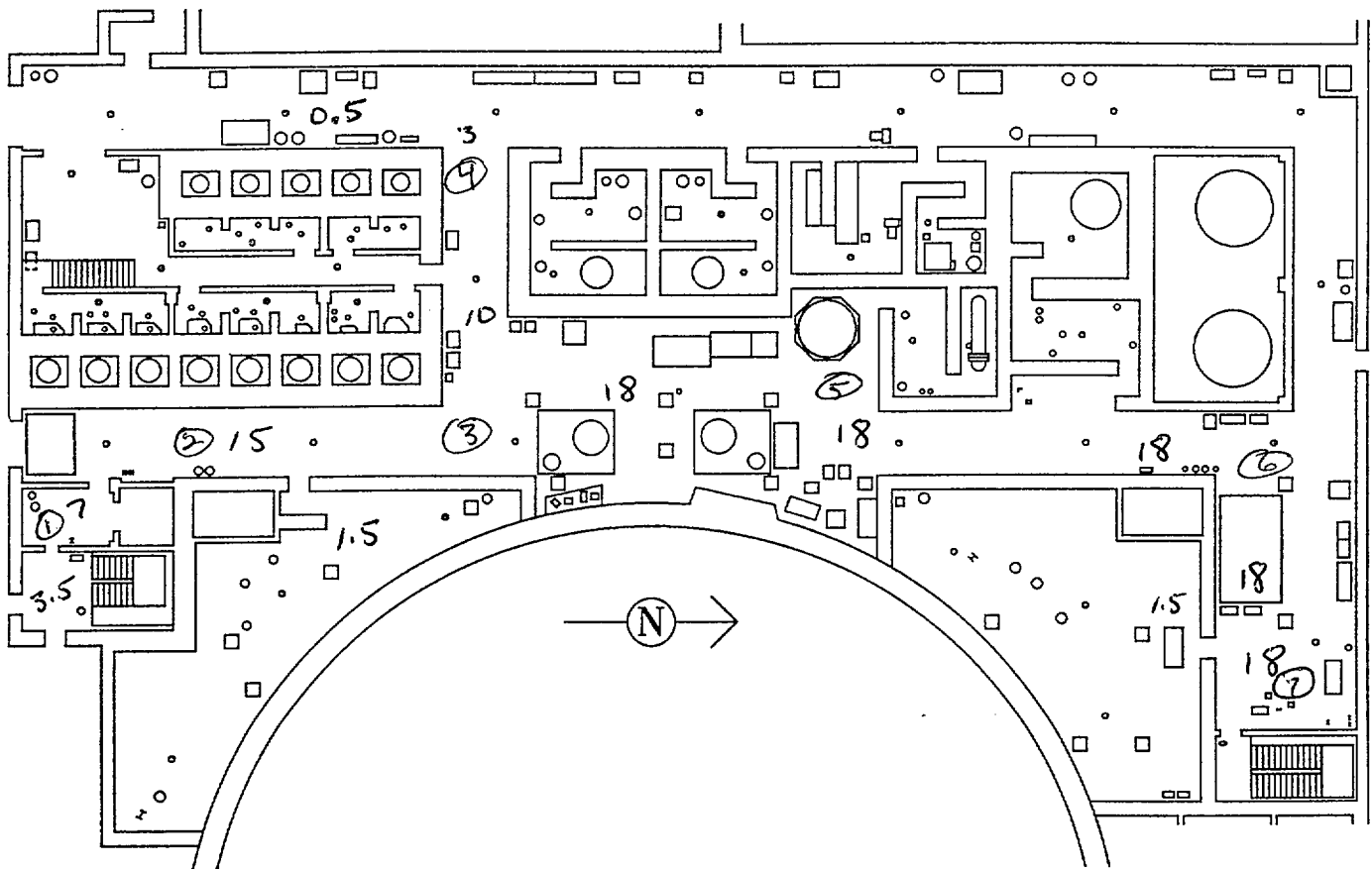
DATE:

HP Tech 003

10-3-01

19 AUG 2000

H210.00001

[illegible]

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm  
Iodine cartridge n. cpm = 700  
Part. cartridge n. cpm = 100

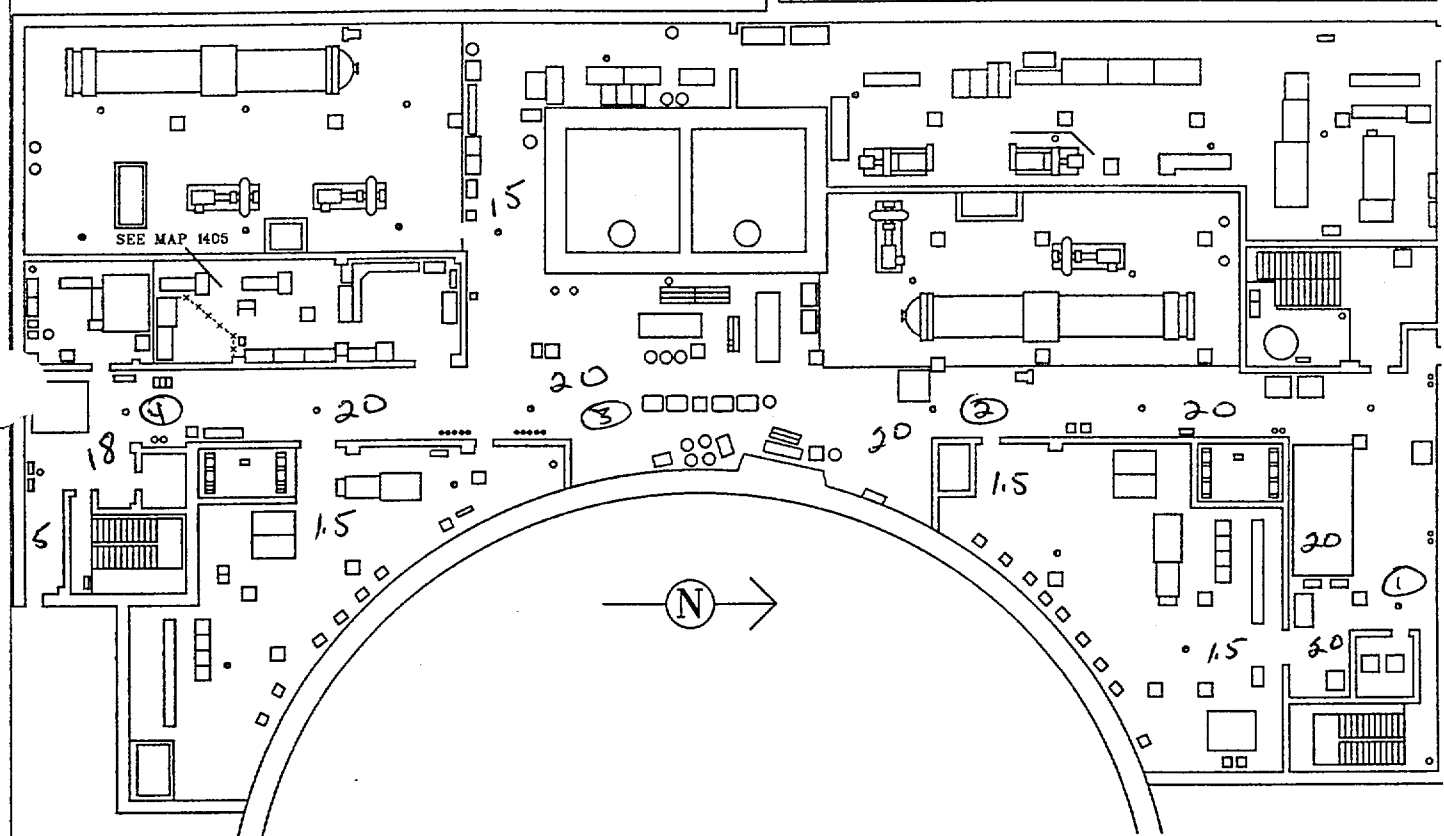
DATE: \_\_\_\_\_

103-01

H210.00001

CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2026 GENERAL AREA						MAP NO: AB-2026	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO: 01-911		INST:		LEGEND ① = SMEAR ② = LARGE AREA SMEAR ③ = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" <input checked="" type="checkbox"/> NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:					
<input checked="" type="checkbox"/> OTHER <i>Drill</i>							
ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED  <input checked="" type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED <input type="checkbox"/> ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED  <input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED  <input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER	
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	350						
2	400						
3	450						
4	450						

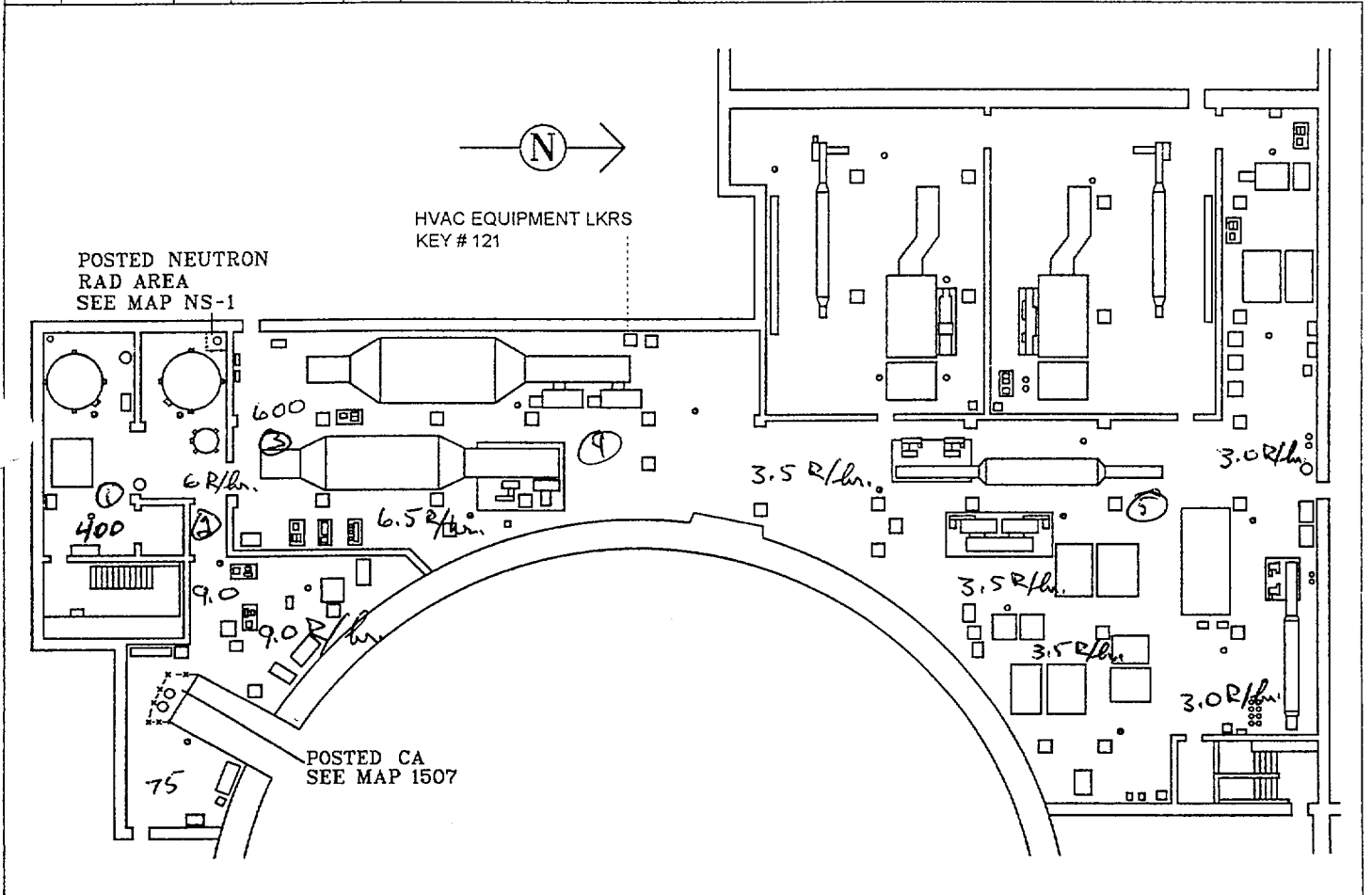


REMARKS					
Dose Rate Range					
All air samples 10 ft <sup>3</sup> 5 min. at 2 cfm Iodine cartridge n.cpm = 1000 Part. cartridge n.cpm = 100					
DOSE					
1200-1214					
REVIEWED BY:	BADGE NO:	TIME/DATE:	REVIEWED BY:	BADGE NO:	DATE:
HPTech	003	10-3-01			

CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

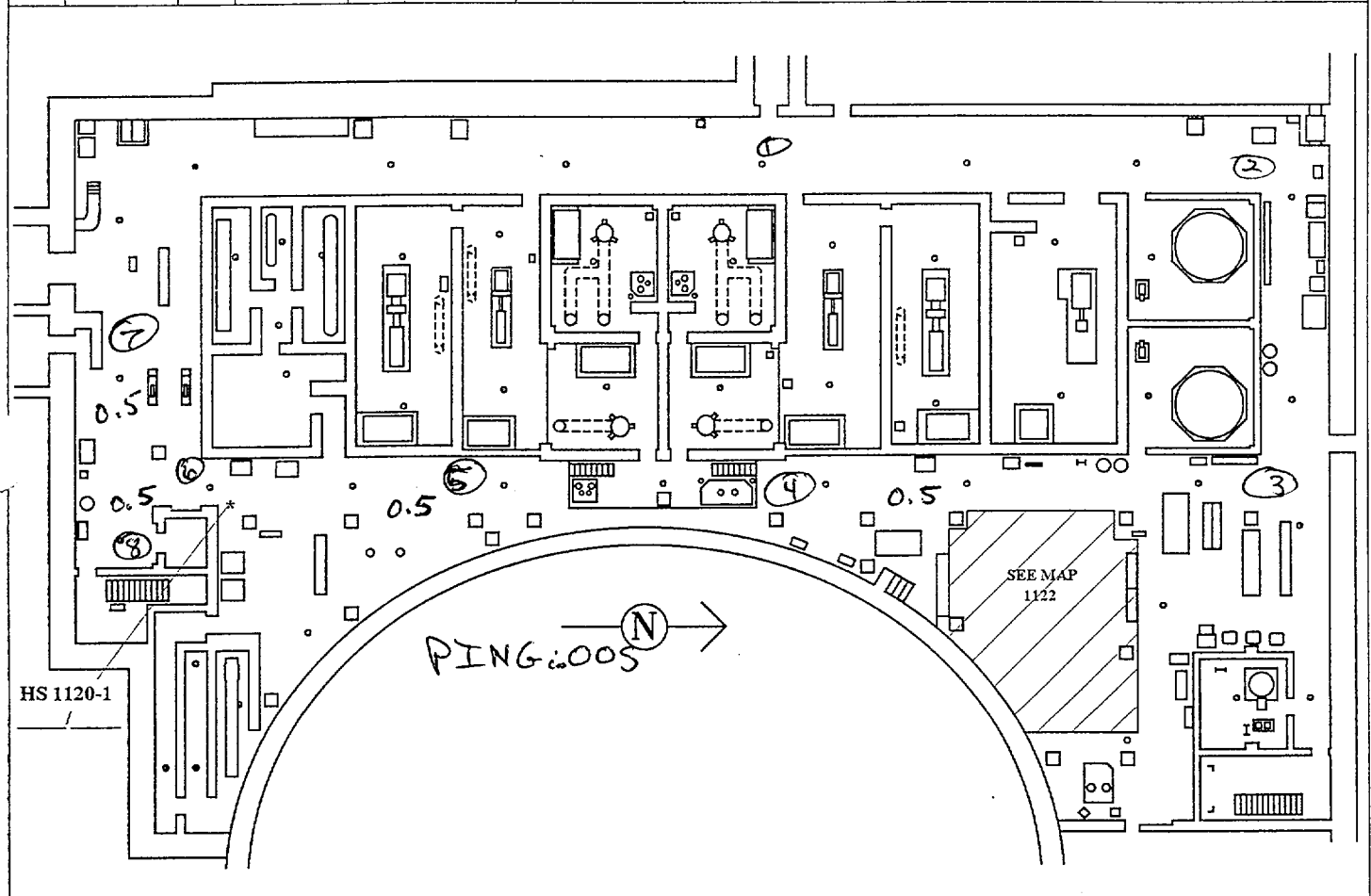
LOCATION: AUXILIARY BUILDING 2047 GENERAL AREA						MAP NO: AB-2047	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO: 01-911		INST:		<b>LEGEND</b> ① = SMEAR Ⓐ = LARGE AREA SMEAR Ⓑ = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" Ⓐ = NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:					
<input checked="" type="checkbox"/> OTHER D-111							
ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA		
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	1K						
2	5K						
3	4K						
4	3.5K						
5	3.0K						

☒ ALL SMEARS < 1000dpm/100cm<sup>2</sup> EXCEPT AS NOTED  
☒ ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED  
☐ ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED  
☐ NO HOT PARTICLES FOUND EXCEPT AS NOTED  
☐ CNTD SMEARS < 20dpm/100cm<sup>2</sup> ALPHA EXCEPT AS NOTED  
 LARGE AREA SMEAR MEDIUM USED ☐ TACKY CLOTH ☐ MASSLINN ☐ OTHER \_\_\_\_\_



REMARKS			
Dose Rate Range _____ mRem/Hr		All air samples 10 ft ± 3 5min. at 2cfm Iodine cartridge n. cpm = 8000 Pant cartridge n. cpm = 200	
DOSE			
IRVEYED BY:	BADGE NO:	TIME/DATE:	REVIEWED BY:
HP Tech	003	10-3-01	

LOCATION: AUXILIARY BUILDING 1974 GENERAL AREA										MAP NO:		AB-1974	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB <input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER <u>Drill</u>				RWP/WAD NO: 01-911		INST: ID. NO.				LEGEND ① = SMEAR Ⓐ = LARGE AREA SMEAR Ⓑ = BETA mrem/hr No. = GAMMA mrem/hr */ = CONTACT/12" Ⓜ = NEUTRON mrem/hr			
LPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA							
SM.#	DPM(CPM)	SM.#	DPM/CPM	SM.#	DPM/CPM	SM.#	DPM/CPM						
8	100							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED					
								<input type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED					
								<input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm      EXCEPT AS NOTED					
								<input type="checkbox"/> NO HOT PARTICLES FOUND      EXCEPT AS NOTED					
								<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA      EXCEPT AS NOTED					
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____					



REMARKS

### Dose Rate Range

mRem/Hr

All air samples  $10 \text{ ft}^3$  5 min at 2 cfm

Iodine cartridge n. cpm =  $< 100$

Paint. cartridge n. cpm =  $< 100$

### DOSE

IRVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE: \_\_\_\_\_

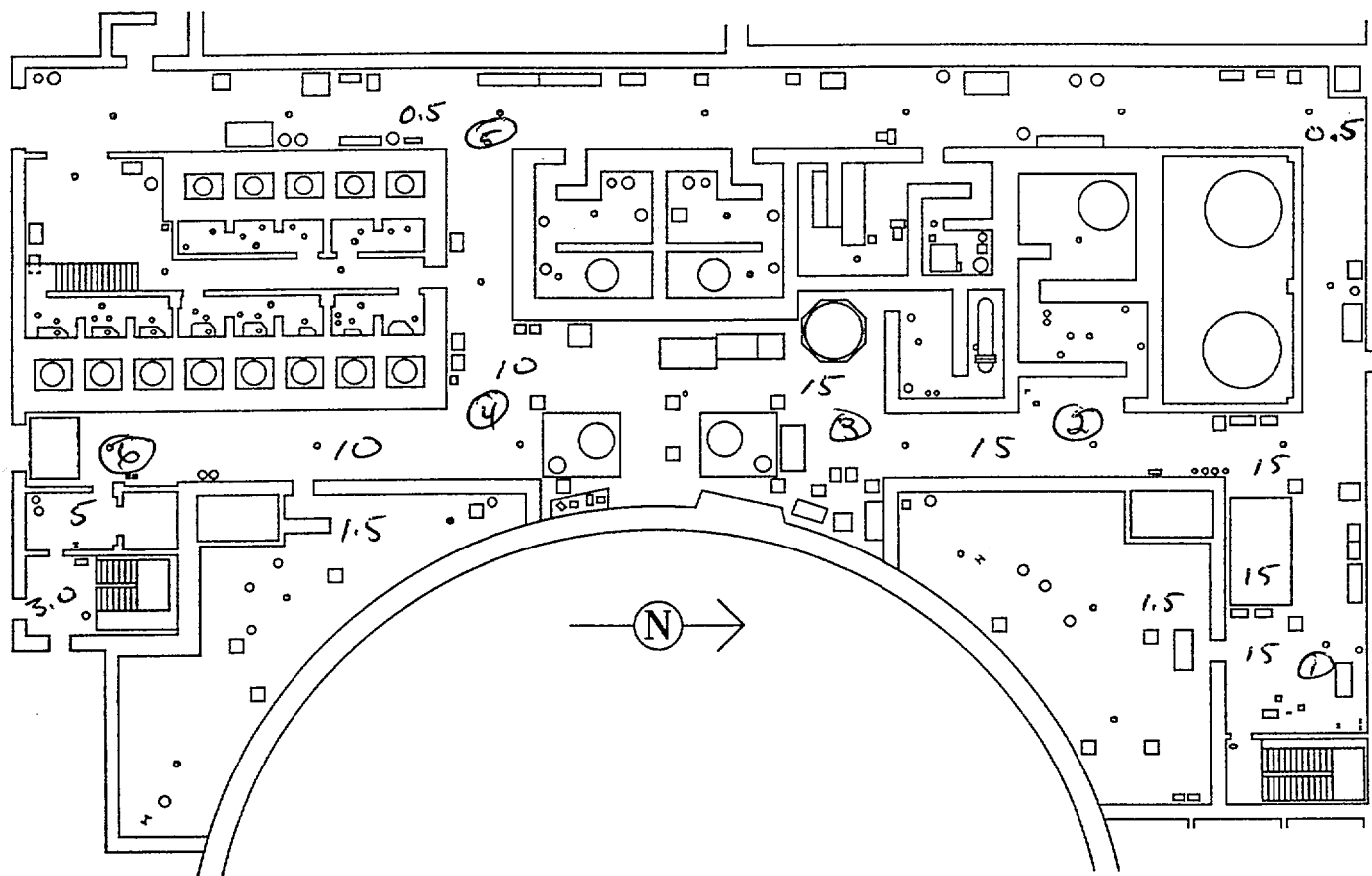
HTech

003

10-3-01

1215-1229

LOCATION: AUXILIARY BUILDING 2000 GENERAL AREA								MAP NO: AB-2000	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB <input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER <u>Dxill</u>				RWP/WAD NO: <u>01-911</u>		INST:		LEGEND ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No. = GAMMA mrem/hr */ = CONTACT/12" ③ = NEUTRON mrem/hr	
ID. NO:									
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
A. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	350							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
2	400							<input type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED	
3	400							<input type="checkbox"/> ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED	
4	450							<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
6	450							<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____	



All air samples 10 ft<sup>3</sup> 5 min at 2 cfm  
Iodine cartridge n. cpm = 500  
Part. cartridge n. cpm = < 100

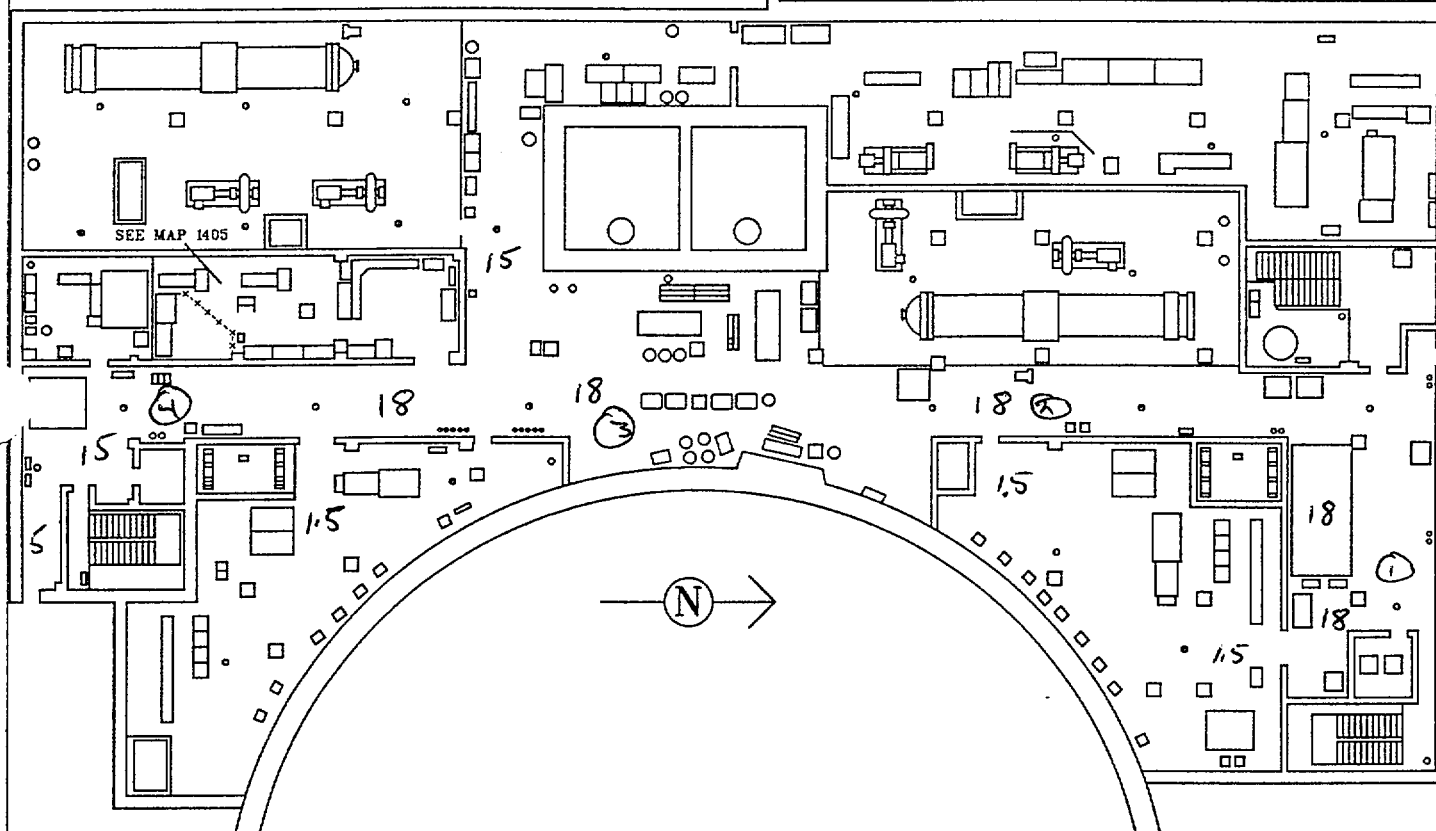
### DOSE

DATE:

10-3-01

H210.00001

<b>LOCATION:</b> AUXILIARY BUILDING 2026 GENERAL AREA								<b>MAP NO:</b> AB-2026	
<b>TYPE:</b>		<input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		<b>RWP/WAD NO:</b>		<b>INST:</b>		<b>LEGEND</b> Ⓐ = SMEAR Ⓑ = LARGE AREA SMEAR Ⓒ = BETA mrad/hr No. = GAMMA mrem/hr % = CONTACT/I <sup>2</sup> " <input checked="" type="checkbox"/> NEUTRON mrem/hr	
		<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		01~911		ID. NO:			
		<input checked="" type="checkbox"/> OTHER Dwell							
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	400							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
2	400							<input checked="" type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED	
3	450							<input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED	
4	450							<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
								<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN	
								<input type="checkbox"/> OTHER _____	

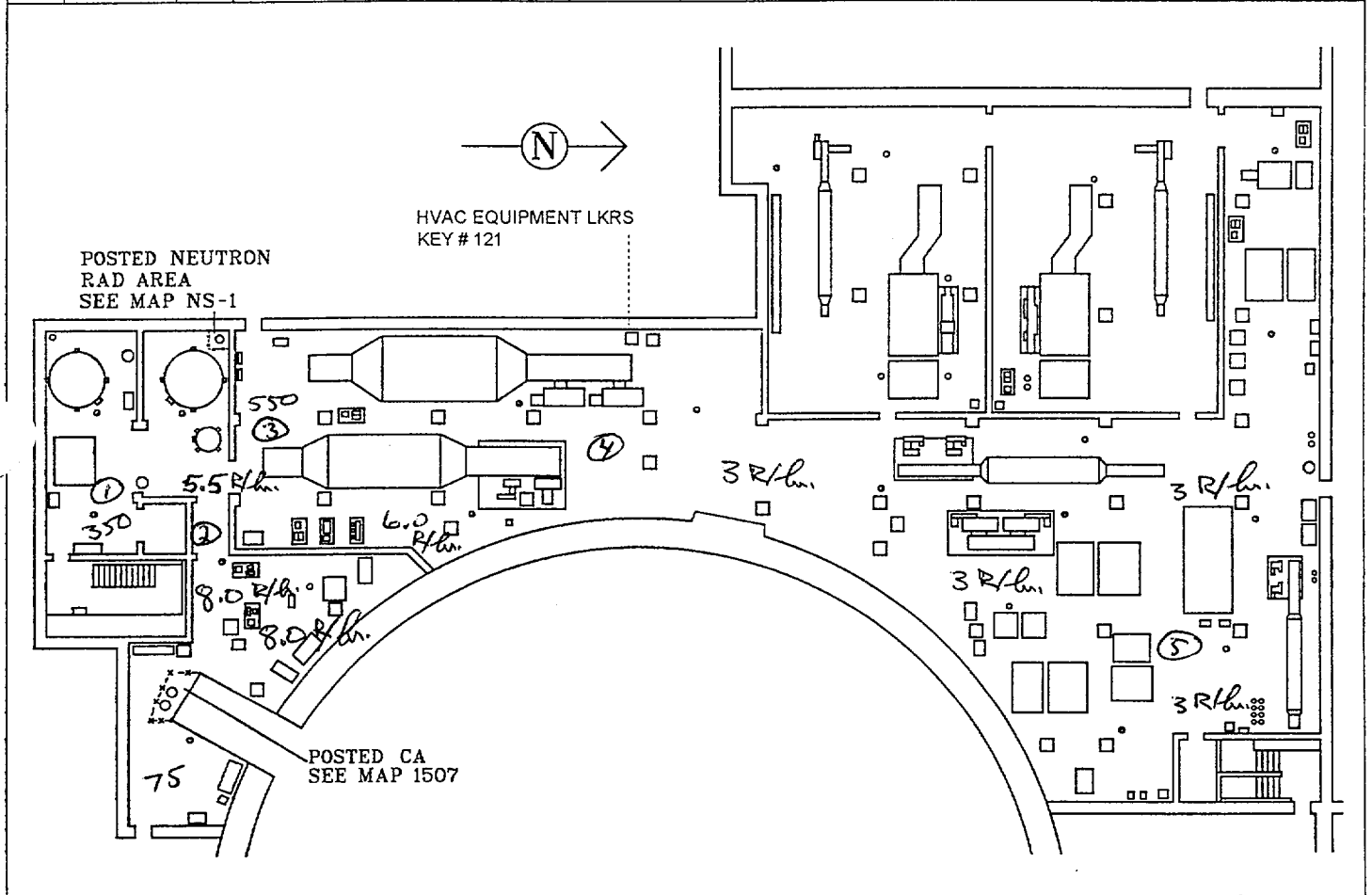


### DOSE

DATE: \_\_\_\_\_

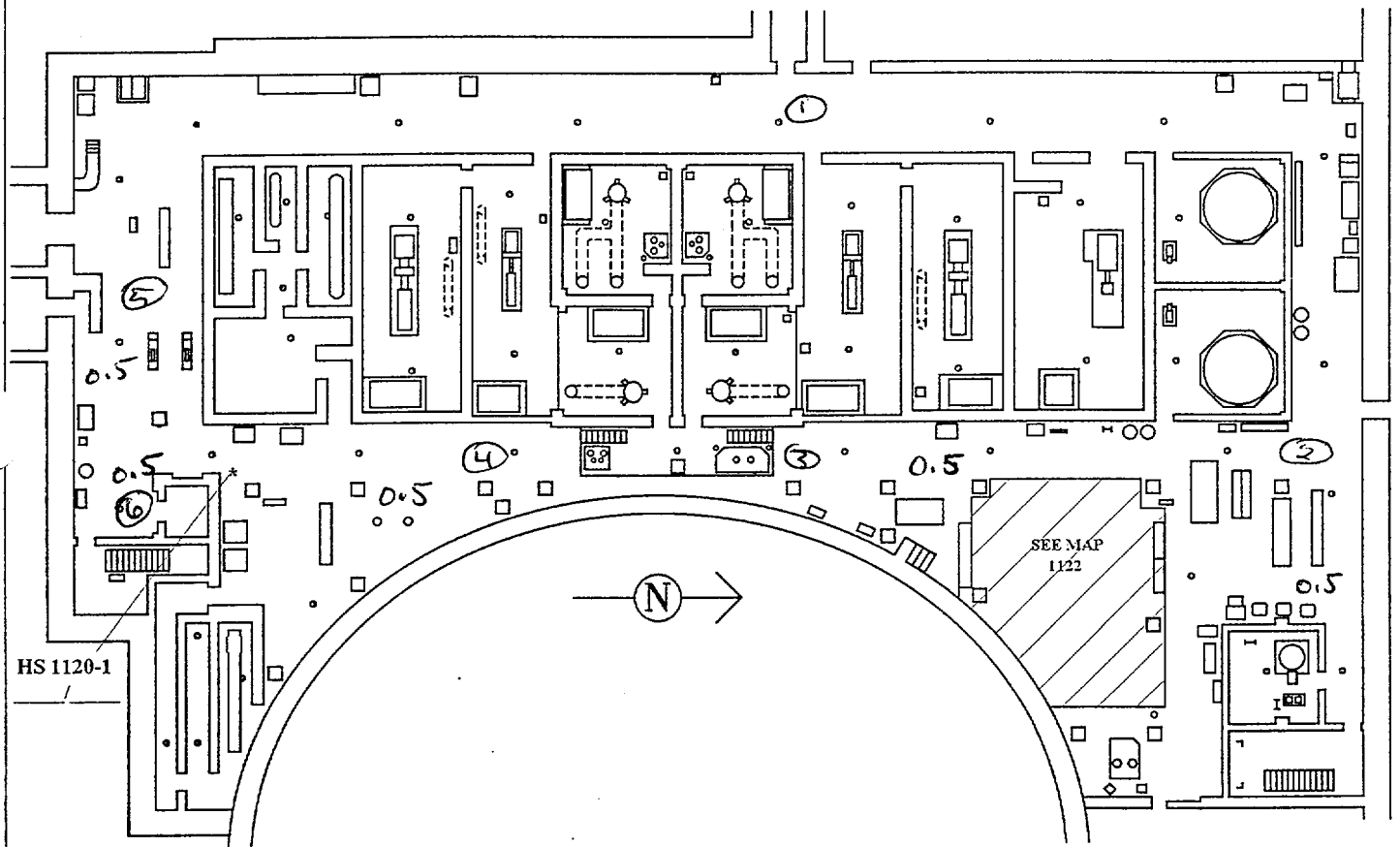
10-3-01



[illegible]

REMARKS	
Dose Rate Range	All air samples 10 ft <sup>3</sup> 5 min. at 2 cfm
mRem/Hr	Iodine cartridge u. cpm = 7500
	Pant cartridge n. cpm = 200
DOSE	1215-1229

SURVEYED BY: HPTech	BADGE NO: 003	TIME/DATE: 10-3-01	REVIEWED BY: [Signature]	BADGE NO: [Blank]	DATE: [Blank]
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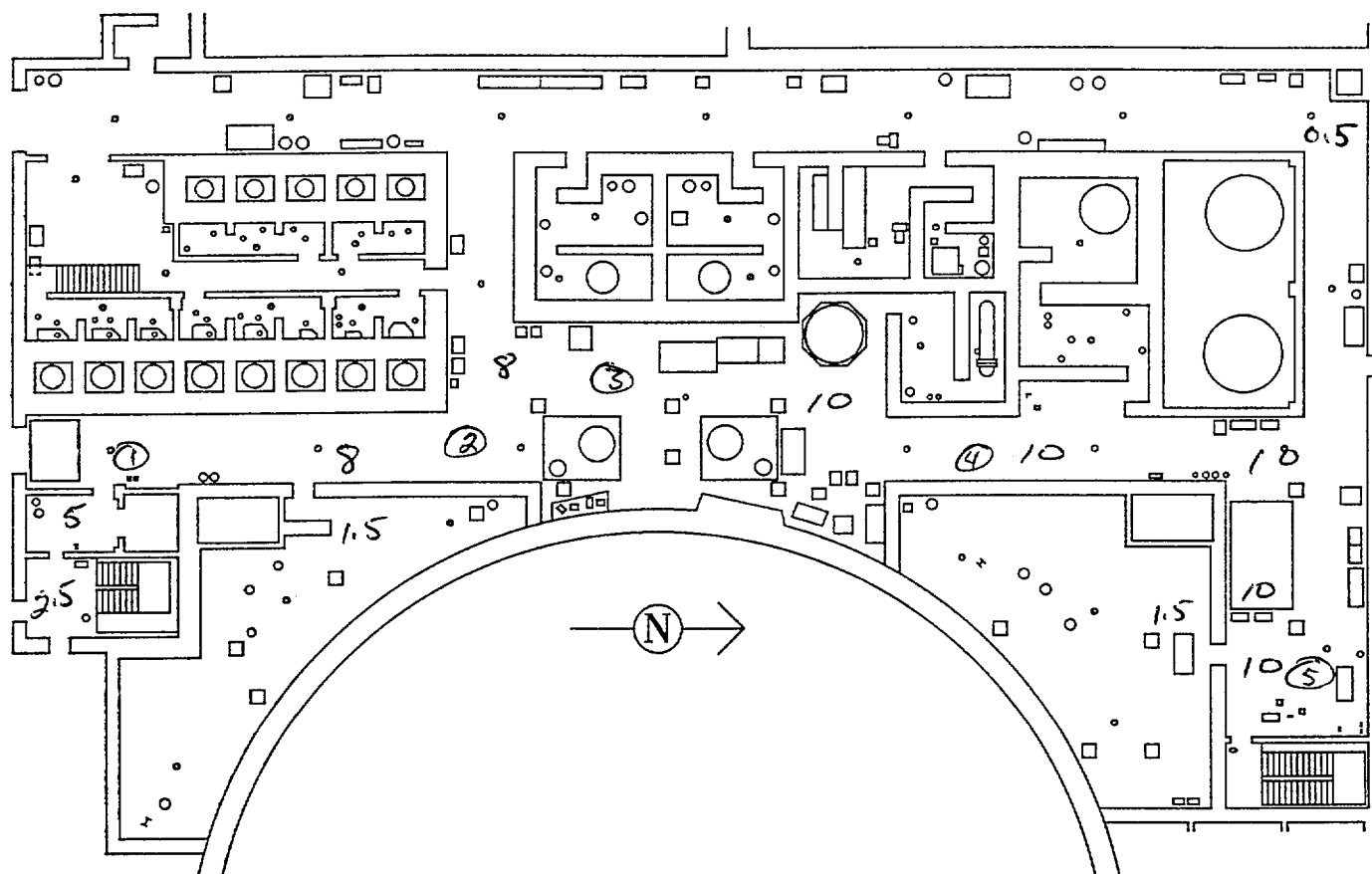
[illegible]

REMARKS	
Dose Rate Range	All air samples 10 ft <sup>3</sup> 5 min at 2 cfm
_____ mRem/Hr	Iodine cartridge n. cpm = < 100
	Pauc. cartridge n. cpm = < 100

SURVEYED BY:		BADGE NO:	TIME/DATE:	REVIEWED BY:		BADGE NO:	DATE:
HFTech		003	10-3-01				

H210.0001

LOCATION: AUXILIARY BUILDING 2000' GENERAL AREA								MAP NO: AB-2000	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB <input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER <u>Drill</u>				RWP/WAD NO: <u>01-911</u>		INST: _____		LEGEND ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No = GAMMA mrem/hr 7/ = CONTACT/12" ② = NEUTRON mrem/hr	
ID. NO: _____									
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	450							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
2	450							<input type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED	
3	450							<input type="checkbox"/> ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED	
4	400							<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
5	400							<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____	



DOSE

DATE: \_\_\_\_\_

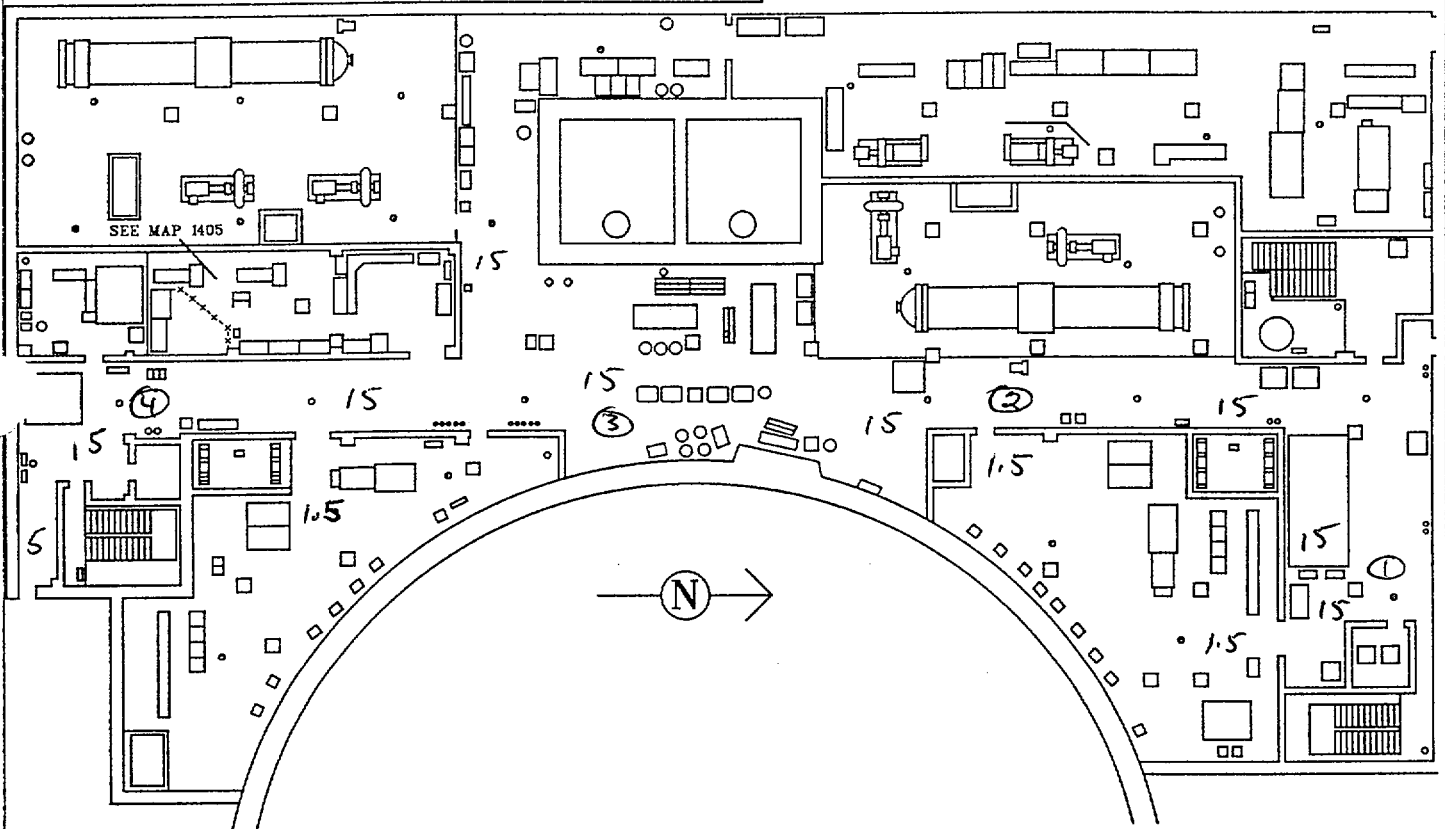
HP Tech

003

103-01

H210.00001

LOCATION: AUXILIARY BUILDING 2026 GENERAL AREA						MAP NO: AB-2026	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB <input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER Drill			RWP/WAD NO: 01~911	INST:		LEGEND ①=SMEAR Ⓐ=LARGE AREA SMEAR Ⓑ=BETA mrad/hr No.= GAMMA mrem/hr */= CONTACT/12" Ⓢ= NEUTRON mrem/hr	
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	350					<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
2	400					<input checked="" type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED	
3	400					<input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED	
4	400					<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
						<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
						LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____	



All air samples 10 ft<sup>3</sup> 5 min. at 2 cfm  
 Iodine cartridge n. cpm = 700  
 Part. cartridge n. cpm = 100

DATE:

10-3-01

CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

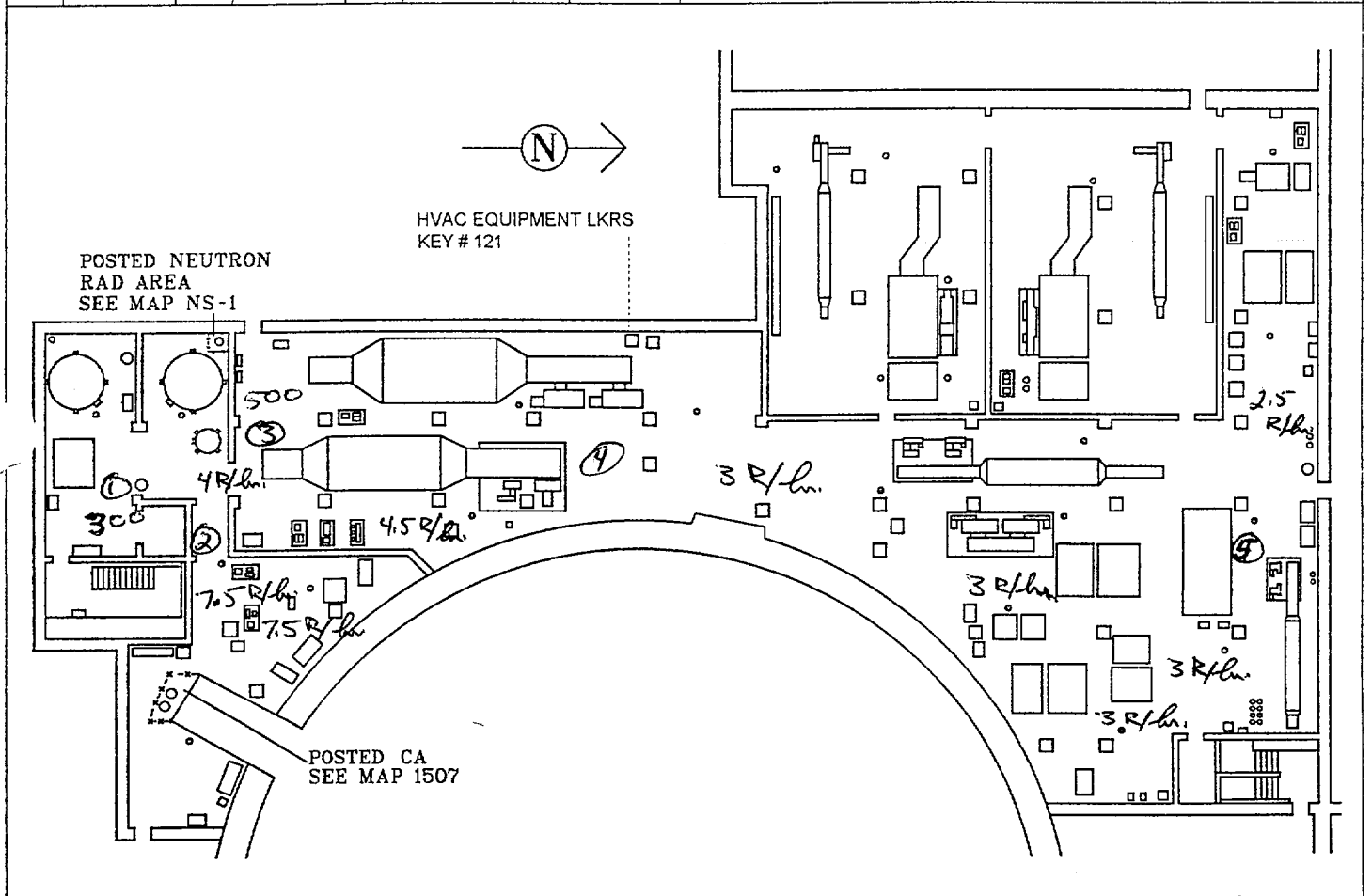
LOCATION: AUXILIARY BUILDING 2047 GENERAL AREA				MAP NO: AB-2047	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO: 01-911		INST: _____	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO: _____		<b>LEGEND</b> ① = SMEAR ② = LARGE AREA SMEAR ③ = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" Δ = NEUTRON mrem/hr	
<input checked="" type="checkbox"/> OTHER <i>Drill</i>					

ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA	
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM
1	15K						
2	6K						
3	5K						
4	4K						
5	3K						

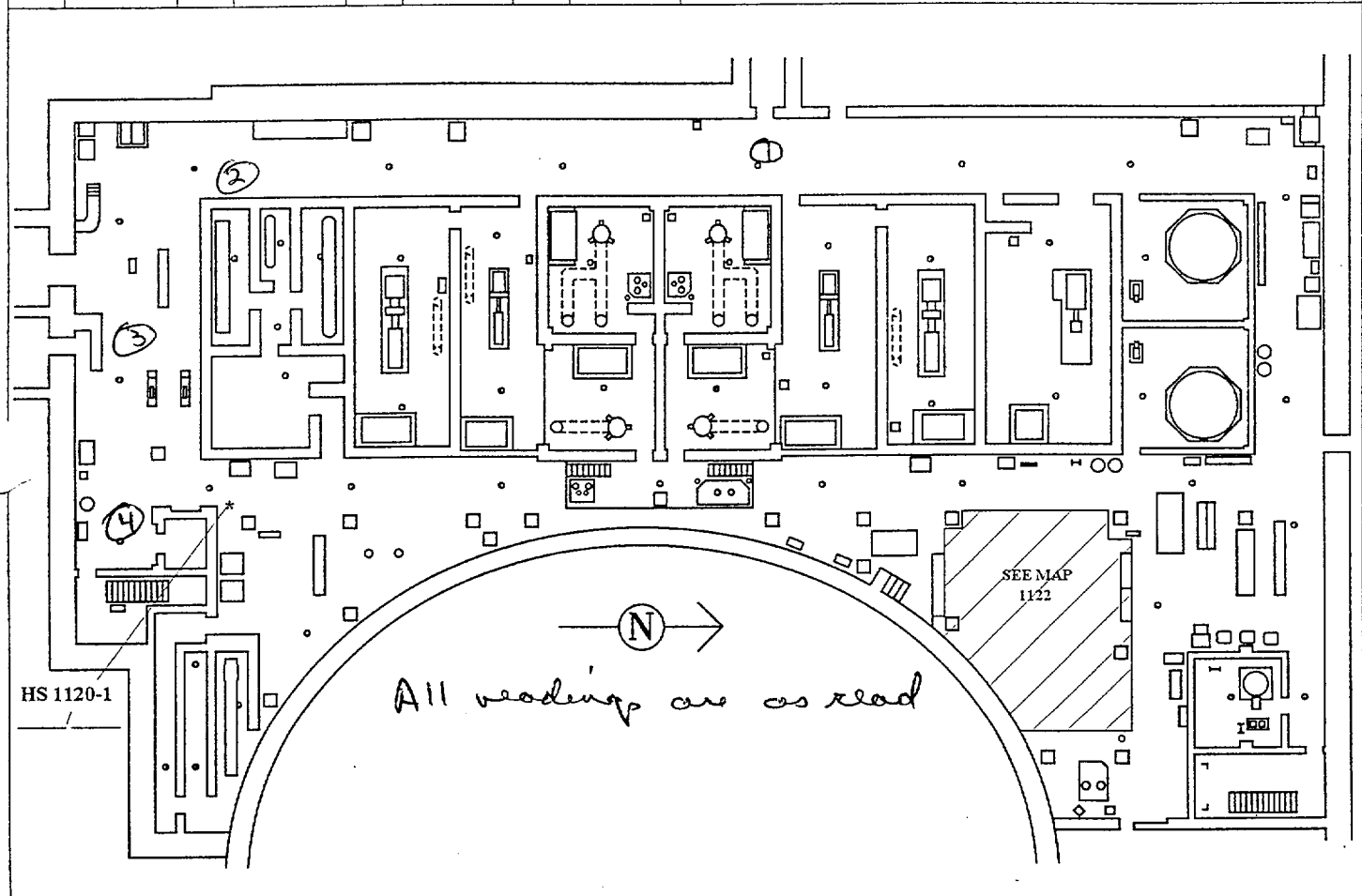
☒ ALL SMEARS < 1000dpm/100cm<sup>2</sup> EXCEPT AS NOTED  
☒ ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED  
☐ ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED  
☐ NO HOT PARTICLES FOUND EXCEPT AS NOTED  
☐ CNTD SMEARS < 20dpm/100cm<sup>2</sup> ALPHA EXCEPT AS NOTED  
 LARGE AREA SMEAR MEDIUM USED ☐ TACKY CLOTH ☐ MASSLINN ☐ OTHER \_\_\_\_\_



REMARKS			
Dose Rate Range _____ mRem/Hr All air samples 10ft±3 5min. at 2cfm Iodine cartridge n. cpm = 7000 Pant cartridge n. cpm = 200			
DOSE _____			
SURVEYED BY: <i>HP Tech</i> BADGE NO: <i>003</i> TIME/DATE: <i>10-3-01</i>	REVIEWED BY: _____ BADGE NO: _____ DATE: _____		

## CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 1974' GENERAL AREA								MAP NO: AB-1974	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB				RWP/WAD NO:		INST:		LEGEND ① = SMEAR ② = LARGE AREA SMEAR ③ = BETA mrad/hr No. = GAMMA mrem/hr */ = CONTACT/12" <input checked="" type="checkbox"/> NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE				ID. NO:					
<input checked="" type="checkbox"/> OTHER <i>Drill</i>				01-911					
LPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
4	100							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED <input type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED <input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED <input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED <input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____	



## REMARKS

Dose Rate Range

\_\_\_\_\_ mRem/Hr

*All air samples 10ft<sup>3</sup> 5 min at 2 cfm**Iodine cartridge n. cpm = < 100**Paul. cartridge n. cpm = < 100*

DOSE

*1245-1300*

SURVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE:

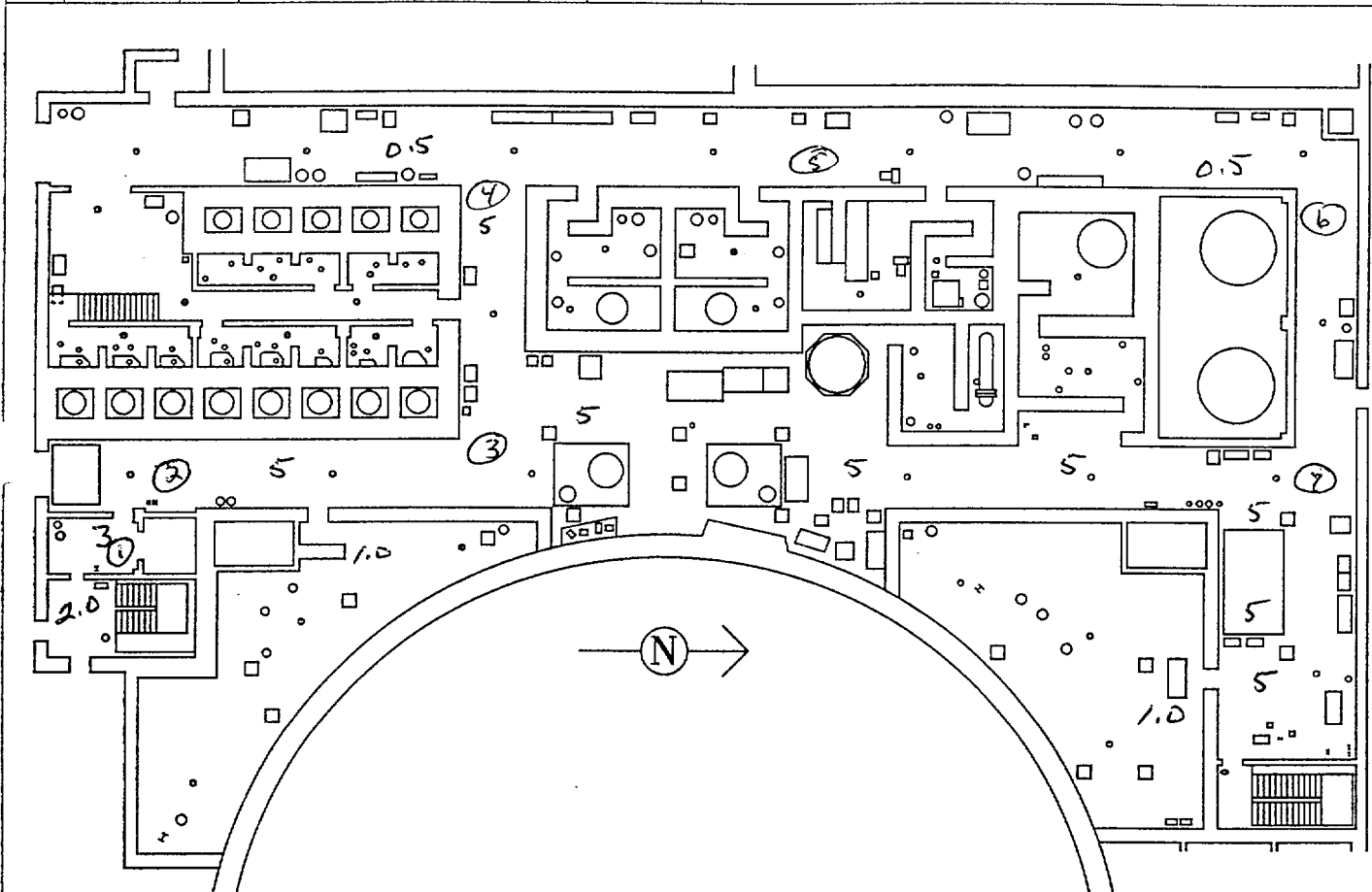
*HFTech 003**10-3-01*

19 AUG 2000

H210.0001

## CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2000 GENERAL AREA								MAP NO: AB-2000	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB <input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER <u>Drill</u>				RWP/WAD NO: <u>01-911</u>		INST:		LEGEND ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" <input checked="" type="checkbox"/> NEUTRON mrem/hr	
				ID. NO:					
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	450							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED  <input type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED <input type="checkbox"/> ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED  <input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED  <input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____	
2	450								
3	450								
7	400								



## REMARKS

## Dose Rate Range

\_\_\_\_\_ mRem/Hr

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm  
 Iodine cartridge n. cpm = 100  
 Part. cartridge n. cpm = < 100

DOSE

1245-1300

SURVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE:

HP Tech

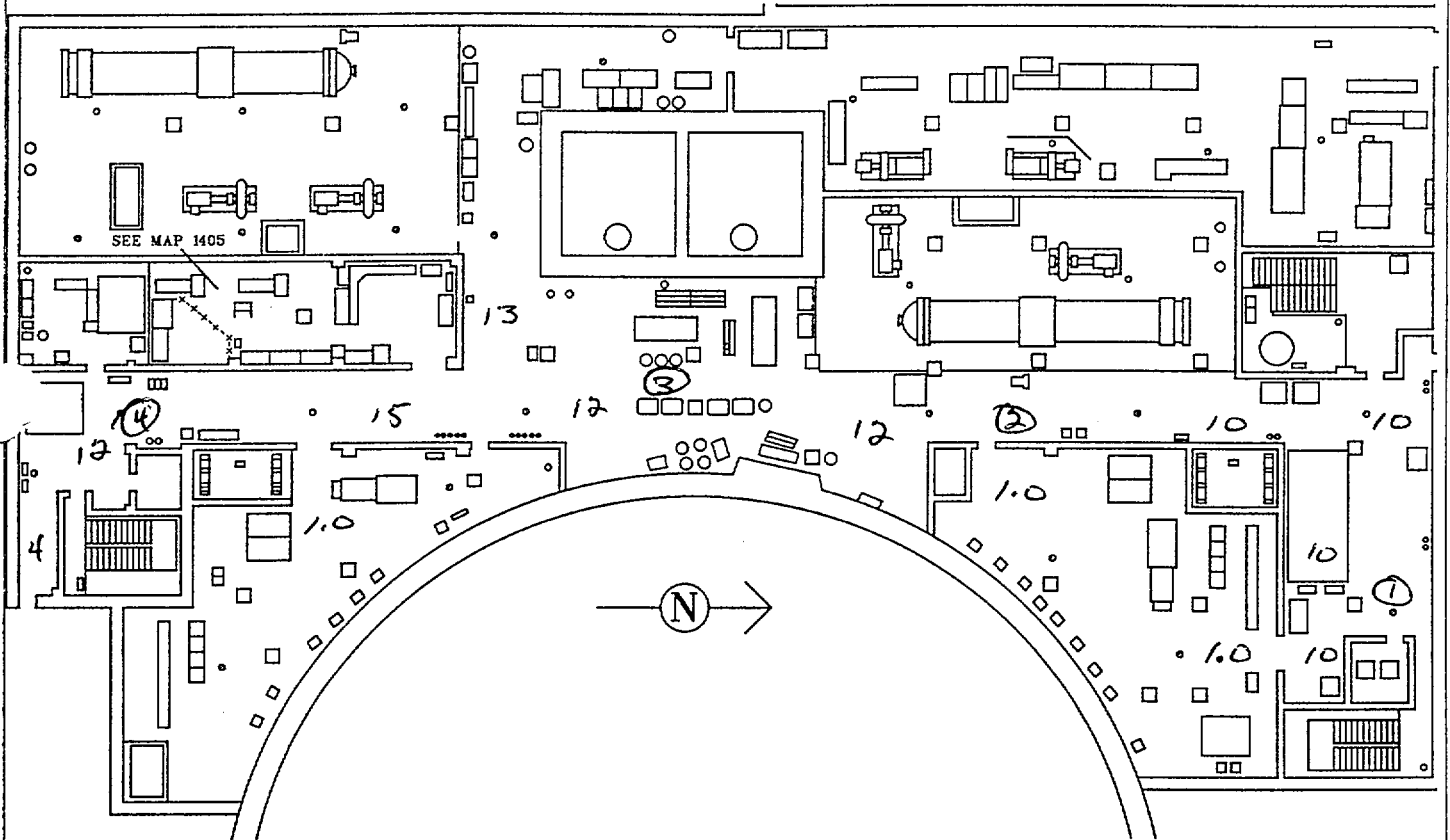
003

10-3-01

19 AUG 2000

H210.0001

LOCATION: AUXILIARY BUILDING 2026' GENERAL AREA								MAP NO: AB-2026	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB <input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER <u>Dwell</u>				RWP/WAD NO: <u>01-911</u>		INST: _____ ID. NO: _____		LEGEND ① = SMEAR Ⓐ = LARGE AREA SMEAR Ⓑ = BETA mrad/hr No. = GAMMA mrem/hr "/= CONTACT/12" Ⓐ = NEUTRON mrem/hr	
LPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	350							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
2	400							<input checked="" type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED	
3	450							<input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED	
4	450							<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
								<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN	
								<input type="checkbox"/> OTHER _____	



All air samples 10 ft<sup>3</sup> 5 min. at 2 cfm  
Iodine cartridge n.cpm = 500  
Part. cartridge n.cpm = < 100

DATE: \_\_\_\_\_

10-3-01

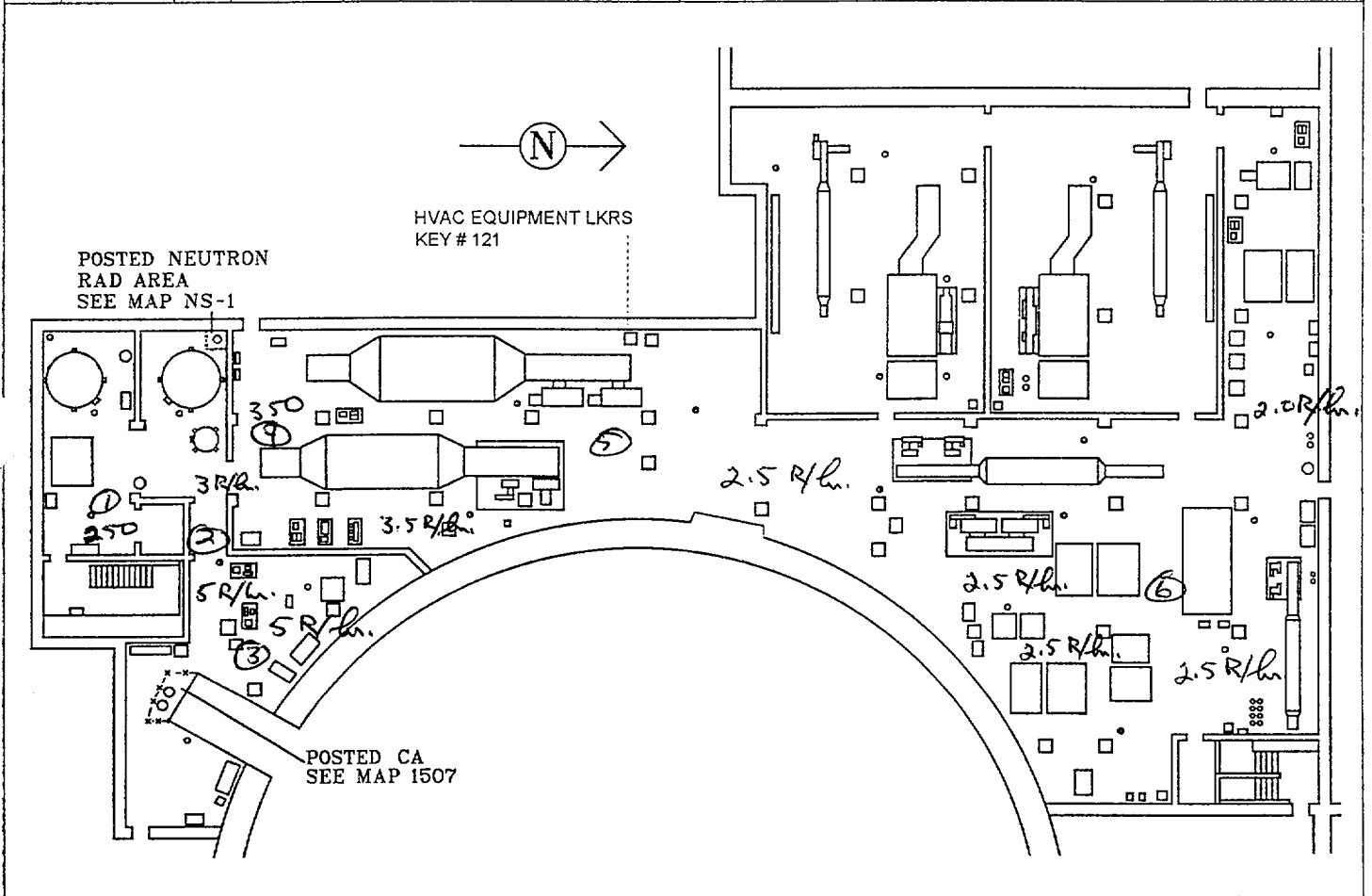


CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

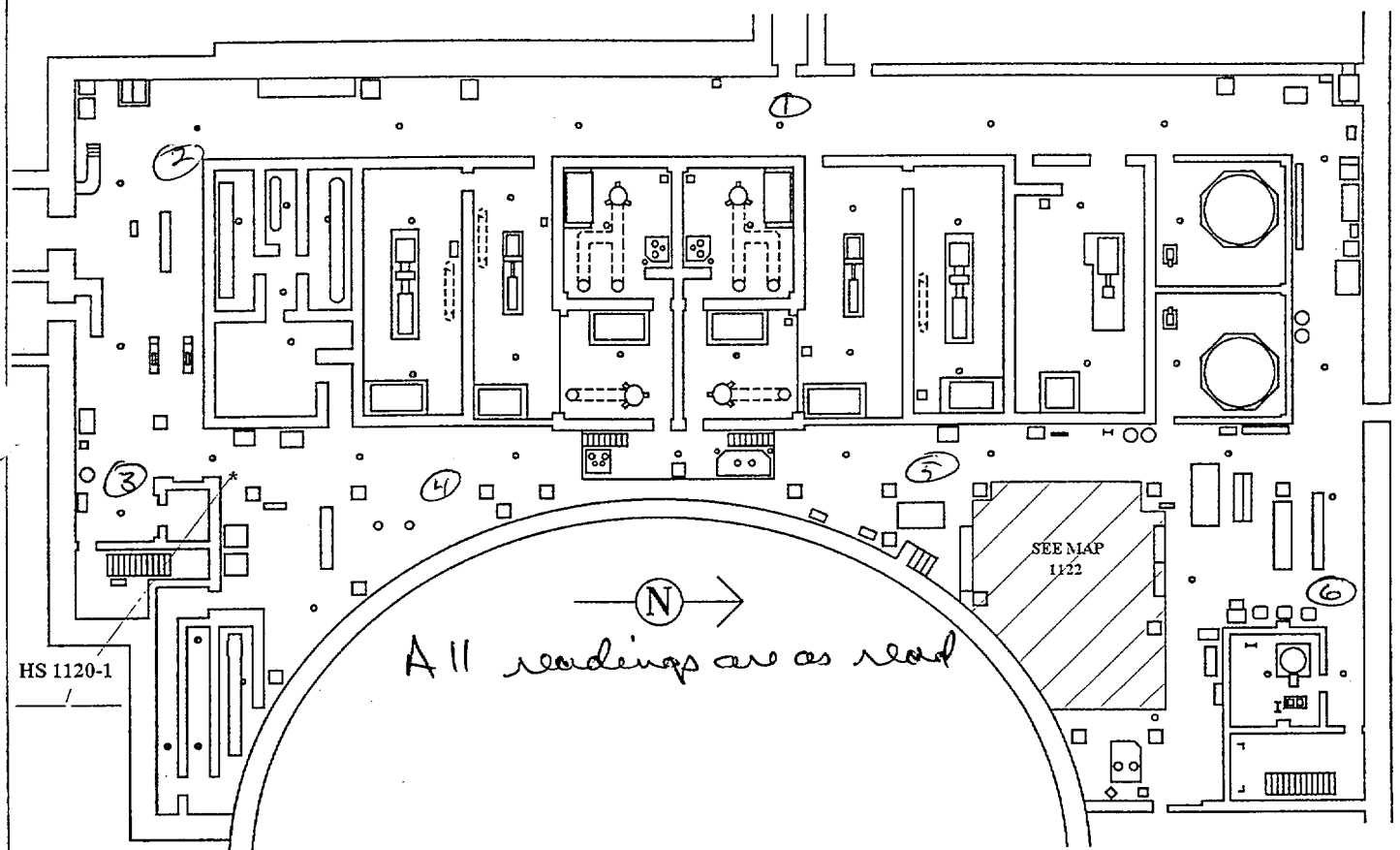
LOCATION: AUXILIARY BUILDING 2047 GENERAL AREA						MAP NO: AB-2047	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO:		INST:		<b>LEGEND</b> ① = SMEAR ② = LARGE AREA SMEAR ③ = BETA mrad/hr No = GAMMA mrem/hr 1/2" = CONTACT/12" ④ = NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:					
<input checked="" type="checkbox"/> OTHER <u>D-111</u>		01-911					

ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA	
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM
1	1.5K						
2	6K						
3	8K						
4	5K						
5	3.5K						
6	3K						

☒ ALL SMEARS < 1000dpm/100cm<sup>2</sup> EXCEPT AS NOTED  
☒ ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED  
☐ ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED  
☐ NO HOT PARTICLES FOUND EXCEPT AS NOTED  
☐ CNTD SMEARS < 20dpm/100cm<sup>2</sup> ALPHA EXCEPT AS NOTED  
 LARGE AREA SMEAR MEDIUM USED ☐ TACKY CLOTH ☐ MASSLINN ☐ OTHER \_\_\_\_\_



REMARKS			
Dose Rate Range _____ mRem/Hr		All air samples 10 ft <sup>3</sup> 5min. at 2 cfm Iodine cartridge n. cpm = 5000 Part cartridge n. cpm = 250	
DOSE _____			
SURVEYED BY: <u>HPTech</u> BADGE NO: <u>003</u> TIME/DATE: <u>10-3-01</u>	REVIEWED BY: _____ BADGE NO: _____ DATE: _____		

[illegible]

REMARKS

### Dose Rate Range

mRem/Hr

All air samples  $10 \text{ ft}^3$  5 min at 2 cfm

Iodine cartridge n. cpm =  $< 100$

Part. cartridge n. cpm =  $< 100$

Release is stopped. Dist is plugged

### DOSE

1300 - Release Stopped

URVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE:

HP Tech 003

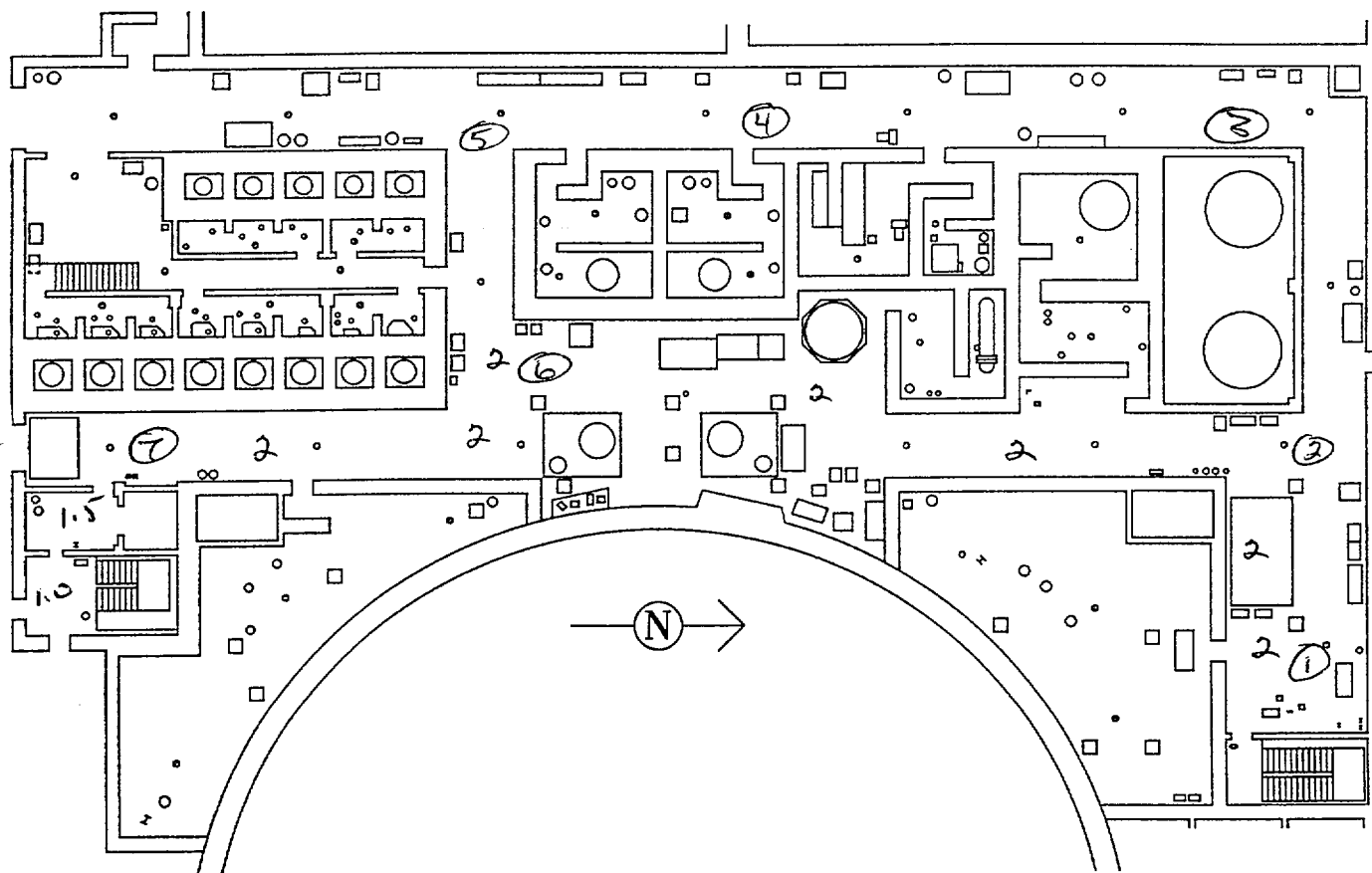
10-3-01

19 AUG 2000

H210.0001

## CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2000' GENERAL AREA								MAP NO: AB-2000	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB				RWP/WAD NO: 01-911		INST:		LEGEND ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" ② = NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE				ID. NO:					
<input checked="" type="checkbox"/> OTHER Drill									
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	400							<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED  <input type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED <input type="checkbox"/> ALL LARGE AREA SMEARS < 100 Ncpm EXCEPT AS NOTED  <input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED  <input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER	
2	400								
6	450								
7	450								



## REMARKS

## Dose Rate Range

mRem/Hr

All air samples 10 ft<sup>3</sup> 5 min at 2 cfm

Iodine cartridge n. cpm = 100

Part. cartridge n. cpm = &lt; 100

Duct is plugged. Release is stopped

DOSE

1300-1315

SURVEYED BY:

BADGE NO:

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE:

HP Tech

003

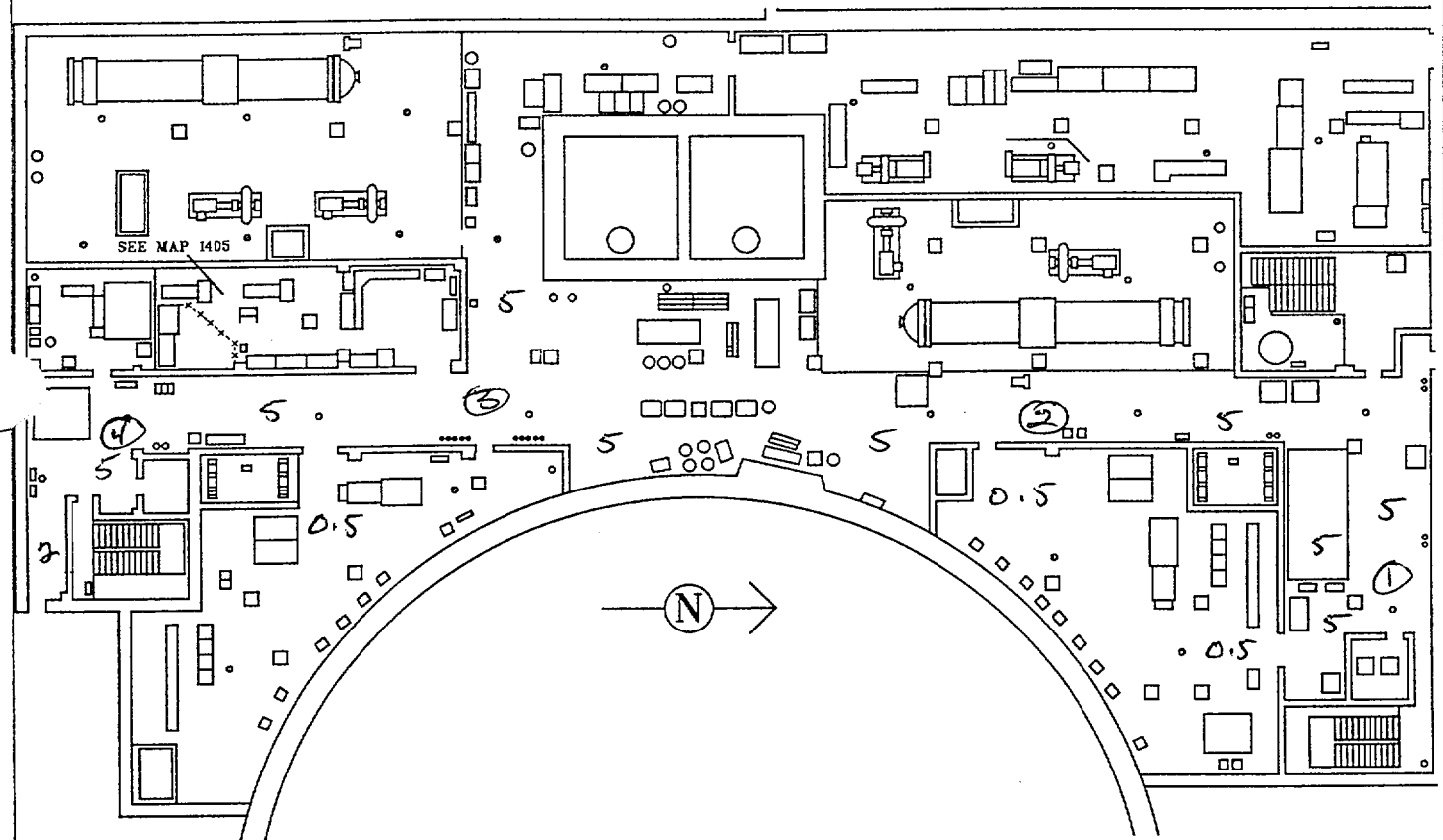
10-3-01

19 AUG 2000

H210.0001

## CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2026 GENERAL AREA								MAP NO: AB-2026	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO:		INST:		LEGEND ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrem/hr No. = GAMMA mrem/hr "/> = CONTACT/12" <input checked="" type="checkbox"/> NEUTRON mrem/hr			
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER <u>Dwell</u>		01-911		ID. NO:					
ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA			
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	400							<input checked="" type="checkbox"/> ALL SMEARS $< 1000 \text{ dpm}/100 \text{ cm}^2$ EXCEPT AS NOTED	
2	400							<input checked="" type="checkbox"/> ALL RADIATION LEVELS $< 0.5$ mrem/hr EXCEPT AS NOTED	
3	450							<input type="checkbox"/> ALL LARGE AREA SMEARS $< 100 \text{ Ncp/m}$ EXCEPT AS NOTED	
4	450							<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
								<input type="checkbox"/> CNTD SMEARS $< 20 \text{ dpm}/100 \text{ cm}^2$ ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____	



REMARKS

### Dose Rate Range

**mRem/Hr**

All air samples 10 ft<sup>3</sup> 5 min. at 2 cfm  
 Iodine cartridge n. cpm = 200  
 Part. cartridge n. cpm = 100

Drum is plugged. Release is stopped

### DOSE

1300-1315

\_\_\_\_\_  
SURVEYED BY:

**BADGE NO:**

TIME/DATE:

REVIEWED BY:

BADGE NO:

DATE: \_\_\_\_\_

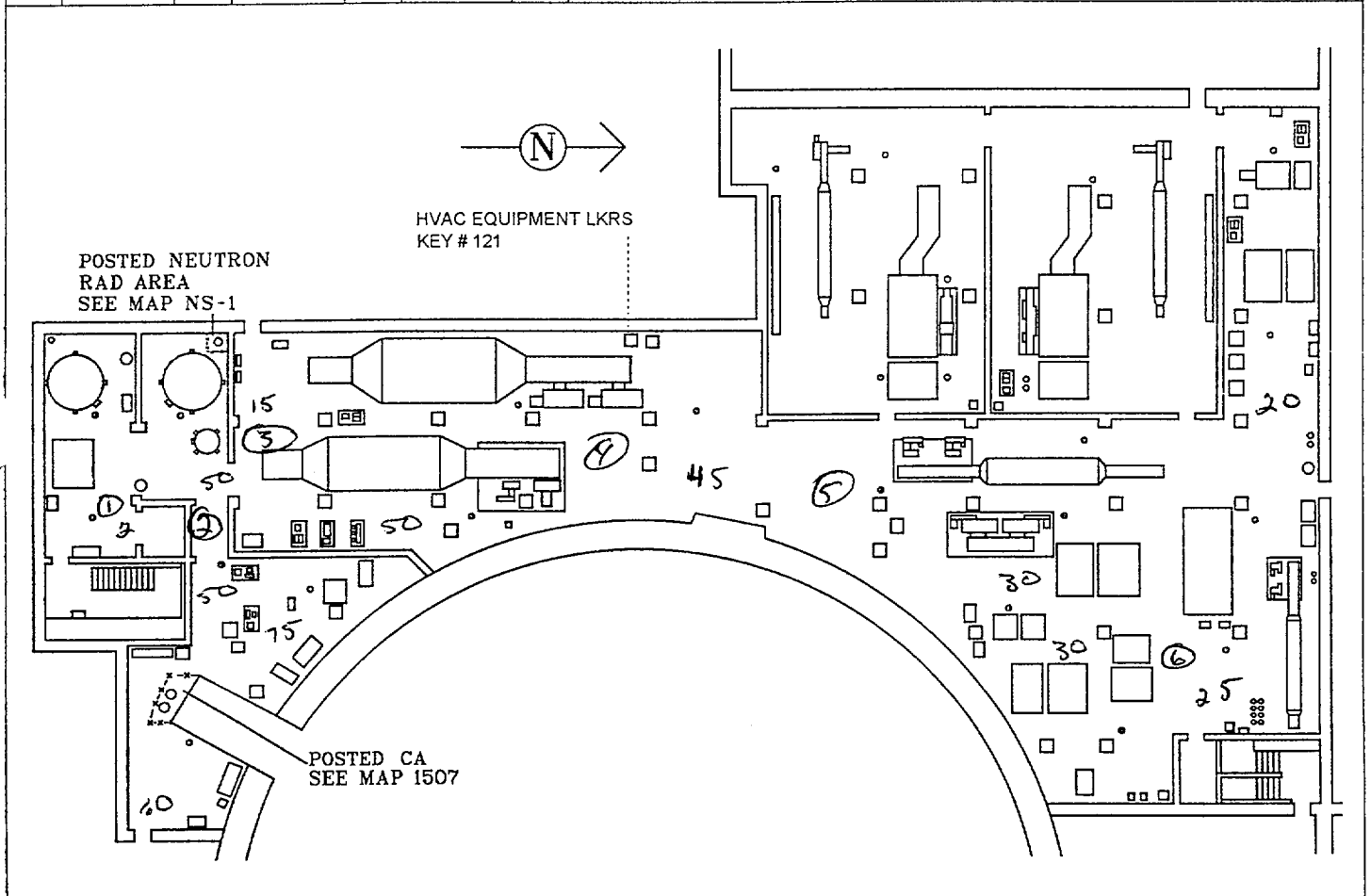
HP Tech

003

10-3-01

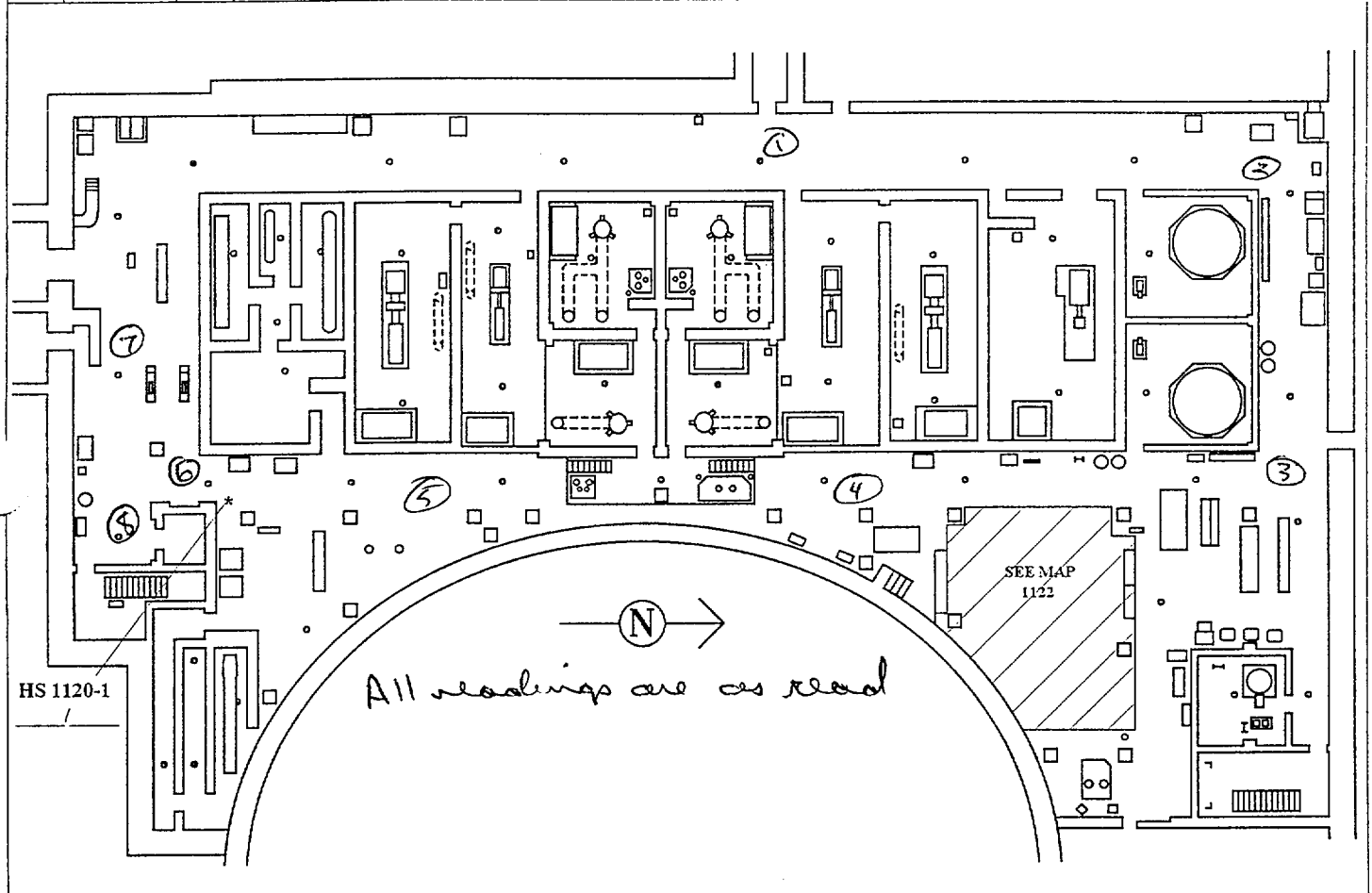
CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2047 GENERAL AREA						MAP NO: AB-2047	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO:		INST:		<b>LEGEND</b> ① = SMEAR ② = LARGE AREA SMEAR ③ = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" ④ = NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:					
<input checked="" type="checkbox"/> OTHER <u>D-111</u>		01-911					
ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA			
SM. # DPM/CPM	SM. # DPM/CPM	SM. # DPM/CPM	SM. # DPM/CPM	SM. # DPM/CPM			
1 1.5K					<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED  <input checked="" type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED <input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED  <input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED  <input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____		
2 6K							
3 5K							
4 3.5K							
5 3.5K							
6 3.0K							



REMARKS			
Dose Rate Range _____ mRem/Hr All air samples 10ft±3 5min. at 2cfm Iodine cartridge n. cpm = 500 Part cartridge n. cpm = <100 Dust is plugged, Release is stopped			
DOSE _____			
1300-1315			
IRVEYED BY:	BADGE NO:	TIME/DATE:	REVIEWED BY: BADGE NO: DATE:
HPTech	003	10-3-01	

LOCATION: AUXILIARY BUILDING 1974 GENERAL AREA								MAP NO: AB-1974	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB <input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER <u>Drill</u>				RWP/WAD NO: 01-911		INST:		LEGEND ① = SMEAR Ⓐ = LARGE AREA SMEAR Ⓑ = BETA mrad/hr No. = GAMMA mrem/hr */ = CONTACT/12" Ⓢ = NEUTRON mrem/hr	
						ID. NO:			
ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA		
# DPM/CMP	SM.# DPM/CPM	SM.# DPM/CPM	SM.# DPM/CPM	SM.# DPM/CPM	SM.# DPM/CPM	SM.# DPM/CPM	SM.# DPM/CPM		
8 100								<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED	
								<input type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED	
								<input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED	
								<input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED	
								<input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED	
								LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____	



**Dose Rate Range**  
mRem/Hr

All air samples  $10\text{ft}^3$  : 5 min at 2 cfm

Iodine cartridge n. cpm =  $< 100$   
 Pant. cartridge n. cpm =  $< 100$

Release is stopped.

1315- End of Drill

SURVEYED BY:	BADGE NO:	TIME/DATE:	REVIEWED BY:	BADGE NO:	DATE:
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HTech

003

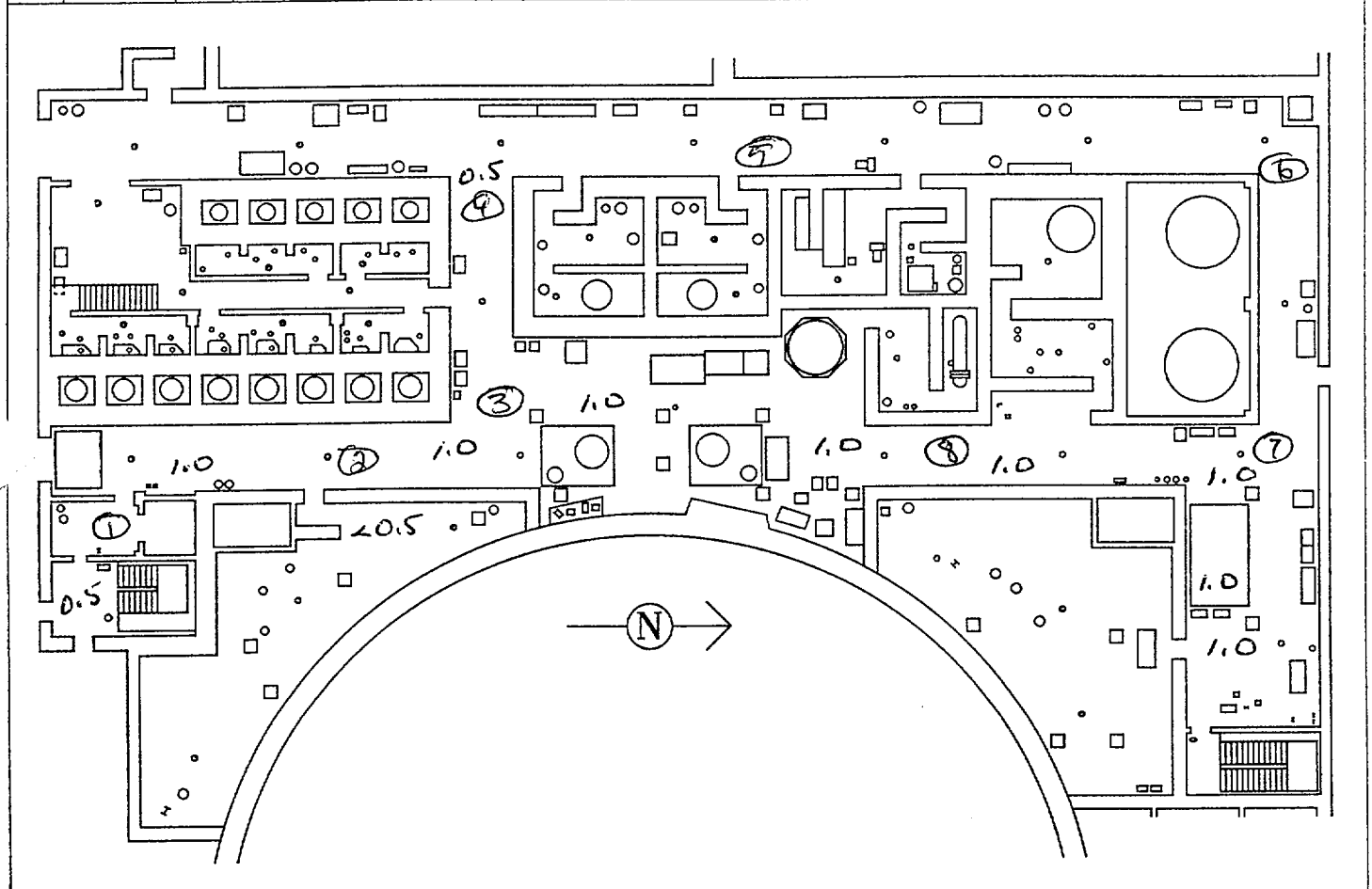
10-3-01

H210.00001

19 AUG 2000

CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2000 GENERAL AREA						MAP NO: AB-2000	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO:		INST:		<b>LEGEND</b> ① = SMEAR ② = LARGE AREA SMEAR ③ = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" ④ = NEUTRON mrem/hr	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:					
OTHER <u>Drill</u>		01-911					
ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA		
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM		
1	450					<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED  <input type="checkbox"/> ALL RADIATION LEVELS < <u>0.5</u> mrem/hr EXCEPT AS NOTED <input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED  <input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED  <input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER _____	
2	450						
3	400						
7	400						
8	400						



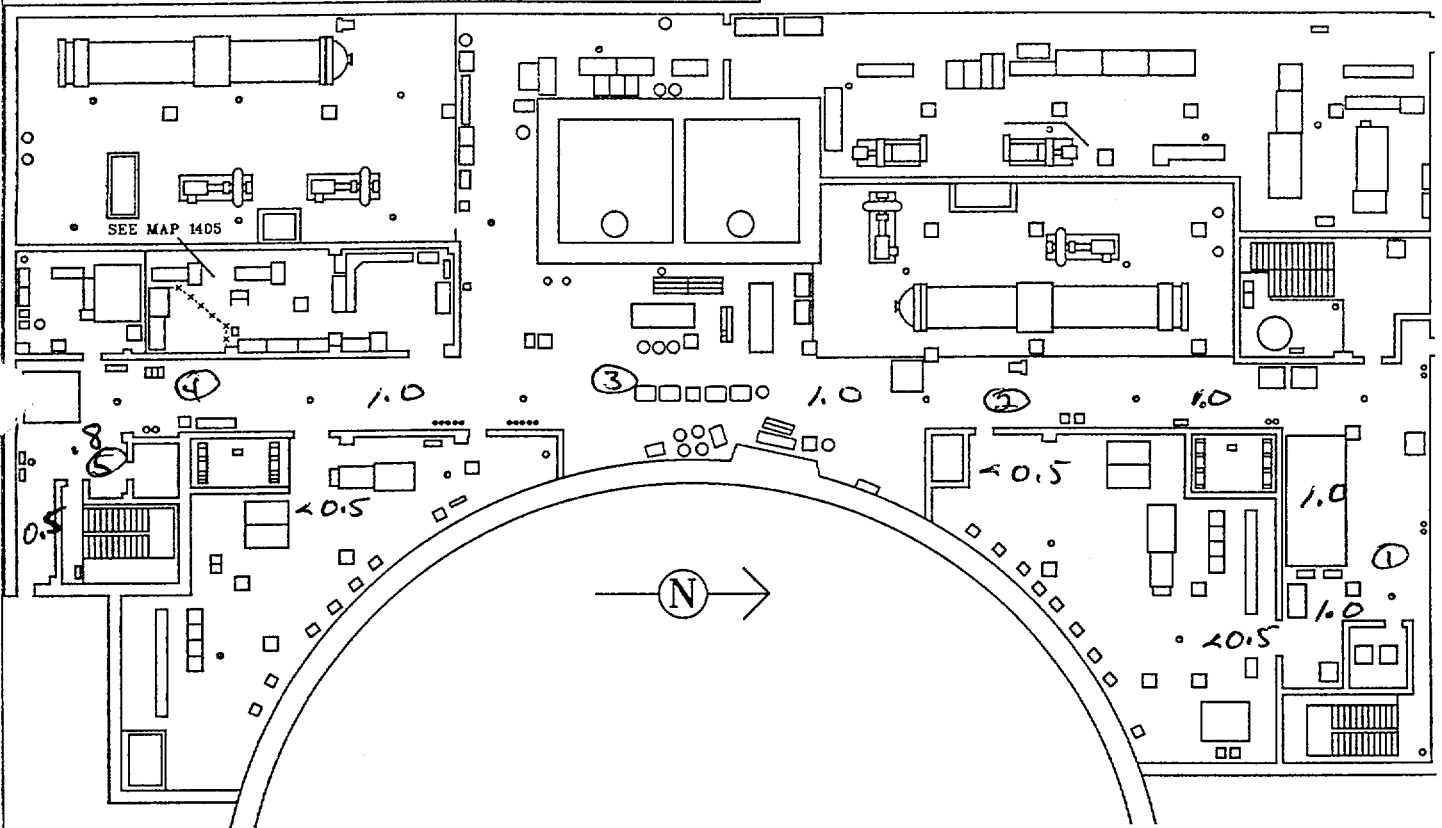
REMARKS			
All air samples 10 ft <sup>3</sup> 5 min at 2 cfm Dose Rate Range _____ mRem/Hr Iodine cartridge n. cpm = < 100 Pant. cartridge n. cpm = < 100 Duct is plugged, Release has been stopped 1315- End of Drill			
DOSE			
SURVEYED BY:	BADGE NO:	TIME/DATE:	REVIEWED BY: BADGE NO: DATE:
HP Tech	003	10-3-01	

19 AUG 2000

H210.0001

## CALLAWAY PLANT RADIOLOGICAL SURVEY SHEET

LOCATION: AUXILIARY BUILDING 2026 GENERAL AREA				MAP NO: AB-2026	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB		RWP/WAD NO: 01-911		INST:	
<input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE		ID. NO:		LEGEND ① = SMEAR ② = LARGE AREA SMEAR ③ = BETA mrad/hr No. = GAMMA mrem/hr * = CONTACT/12" △ = NEUTRON mrem/hr	
<input checked="" type="checkbox"/> OTHER Drill					
ALPHA/BETA	ALPHA/BETA	ALPHA/BETA	ALPHA/BETA		
SM. # DPM/CPM	SM. # DPM/CPM	SM. # DPM/CPM	SM. # DPM/CPM		
1 400				<input checked="" type="checkbox"/> ALL SMEARS < 1000dpm/100cm <sup>2</sup> EXCEPT AS NOTED  <input checked="" type="checkbox"/> ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED <input type="checkbox"/> ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED  <input type="checkbox"/> NO HOT PARTICLES FOUND EXCEPT AS NOTED  <input type="checkbox"/> CNTD SMEARS < 20dpm/100cm <sup>2</sup> ALPHA EXCEPT AS NOTED LARGE AREA SMEAR MEDIUM USED <input type="checkbox"/> TACKY CLOTH <input type="checkbox"/> MASSLINN <input type="checkbox"/> OTHER	
2 400					
3 450					
4 450					
5 450					



REMARKS  
 Dose Rate Range All air samples 10 ft 3 5 min. at 2 ft m  
 mRem/Hr Iodine cartridge n.cpm = 150  
 Part. cartridge n.cpm = < 100  
 Dust is plugged, Release has been stopped.

DOSE

1315 to End of Drill

SURVEYED BY: H/P Tech	BADGE NO: 003	TIME/DATE: 10-3-01	REVIEWED BY:	BADGE NO:	DATE:
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18 AUG 2000

H210.0001



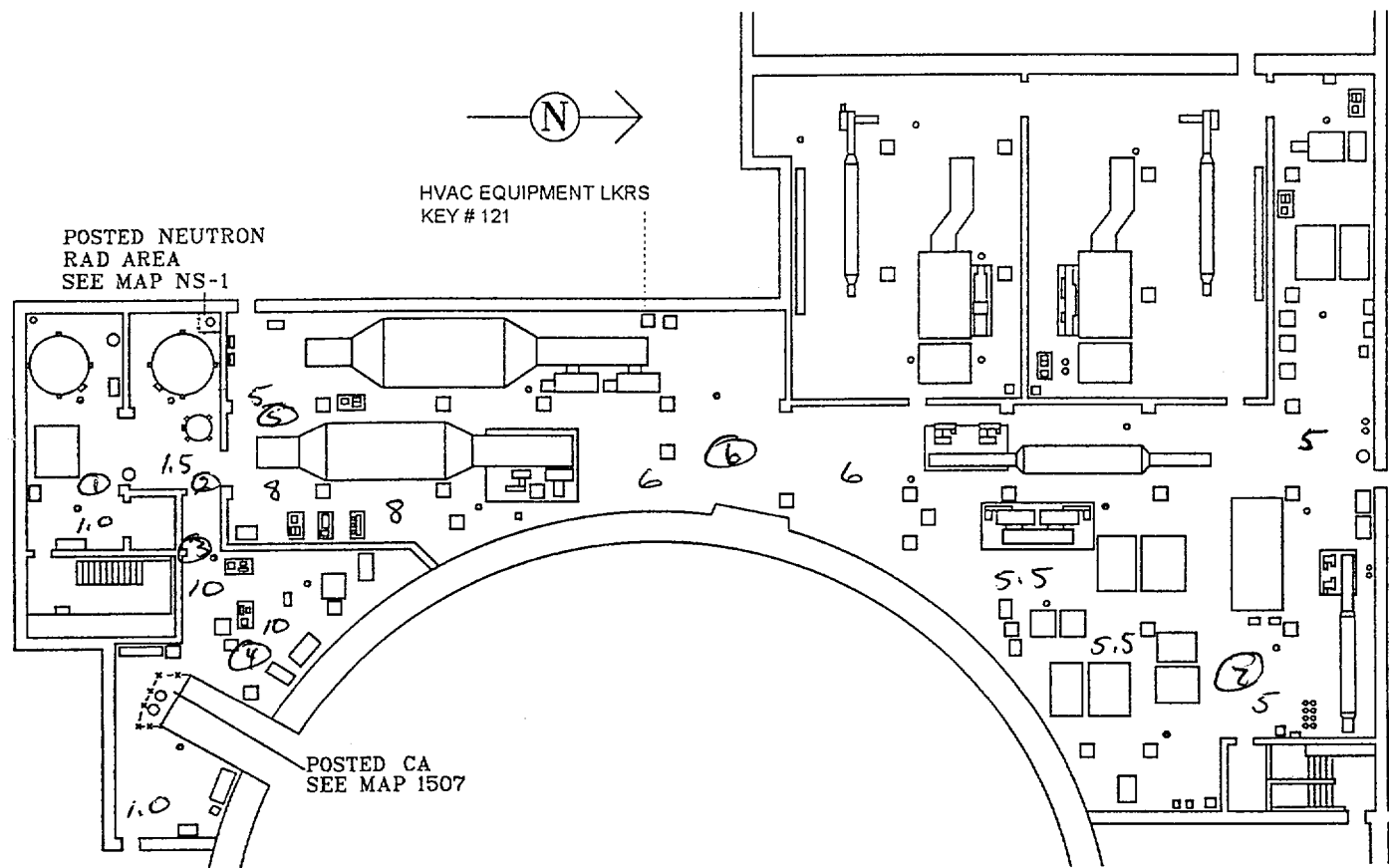
LOCATION: AUXILIARY BUILDING 2047 GENERAL AREA								MAP NO: AB-2047	
TYPE: <input type="checkbox"/> ROUTINE <input type="checkbox"/> PRE JOB <input type="checkbox"/> POST DECON <input type="checkbox"/> JOB COVERAGE <input checked="" type="checkbox"/> OTHER <u>D-111</u>				RWP/WAD NO: <u>01-911</u>		INST: _____		LEGEND ① = SMEAR ④ = LARGE AREA SMEAR ② = BETA mrad/hr No. = GAMMA mrem/hr 1/2 = CONTACT/12" <input checked="" type="checkbox"/> NEUTRON mrem/hr	
ID. NO: _____									

ALPHA/BETA		ALPHA/BETA		ALPHA/BETA		ALPHA/BETA	
SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM	SM. #	DPM/CPM
1	1.5K						
2	6K						
3	25K						
4	8K						
5	5K						
6	3.5K						
7	3K						

☒ ALL SMEARS < 1000dpm/100cm<sup>2</sup> EXCEPT AS NOTED  
  
☒ ALL RADIATION LEVELS < 0.5 mrem/hr EXCEPT AS NOTED  
☐ ALL LARGE AREA SMEARS < 100Ncpm EXCEPT AS NOTED  
  
☐ NO HOT PARTICLES FOUND EXCEPT AS NOTED  
  
☐ CNTD SMEARS < 20dpm/100cm<sup>2</sup> ALPHA EXCEPT AS NOTED  
 LARGE AREA SMEAR MEDIUM USED ☐ TACKY CLOTH ☐ MASSLINN  
☐ OTHER \_\_\_\_\_



### DOSE

1315- End of Drill

DATE: \_\_\_\_\_

10-3-01

H210.0001