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**Cover Sheet for a Hanford
Historical Document
Released for Public Availability**

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**Pacific Northwest Laboratory
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COMBINED INITIAL AND SPECIAL SECURITY SURVEY OF
PACIFIC NORTHWEST LABORATORY

B. J. Merrill

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May 1, 1985

Mr. Kenneth H. Jackson, Director
Safeguards and Security Division
Richland Operations Office
Department of Energy
Richland, WA 99352

Dear Mr. Jackson:

COMBINED INITIAL AND SPECIAL SECURITY SURVEY OF PACIFIC NORTHWEST LABORATORY

Ref 1: Your letter to Director, PNL, dated April 18, 1985, same subject as above, (C/NSI).

Ref 2: Enclosure to Reference 1, Copy 2 of 2, Series A, dated April 18, 1985, SAS-4802, same subject as above, (S/NSI).

Attached are the initial responses to the survey findings; reference above subject. The attached document contains responses to the findings resulting from the special security survey conducted at 209-E Area Critical Mass Laboratory, as well as comments in response to findings relating to the Sigma Access program.

A response to the findings of the initial survey of the COMSEC Secure Telephone Unit (STU-II), intended for use by the National Security Technology Program Office, will not be addressed. A final inspection for security-plan approval was conducted on 9 Apr 85 by Messrs. Sieracki and Charters, and all security and administrative deficiencies had been corrected. Subsequent approval of the security plan and STU-II operation was formally granted by letter from DOE-RL ADP, dated 17 Apr 85.

If you have any further questions or comments, please call D. M. Montgomery, of my staff, on 375-2278.

Very truly yours,

B. J. Merrill, Acting Manager
Safeguards and Security
Department

BJM:DRM:sc

Attachments

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PACIFIC NORTHWEST LABORATORY (U)

B. J. Merrill

May 1, 1985

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By Authority of CG-SS-3,
RK Ingle, 9-27-94.
By J. E. Maly, 9-30-94.
Verified By J. E. Savelly 10-4-94

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Finding 1 identified four vulnerabilities observed in the 209-E Area perimeter security system during the survey/inspection.

- A repeat finding from June 1982 identified steamlines (two) transversing the perimeter security systems allowing system circumvention.

RL Comment: The vulnerability still existed at the time of this survey and no interim measures had been taken to lessen the impact.

PNL Response: Both the east and west steamlines have had a passive security alarm sensor system (E-Flex) installed and tested. Razor Ribbon was also installed on both steamlines at a location between the E-Flex and inner protected area fence.

This action was completed on April 18, 1985

- Another vulnerability listed the perimeter microwave system as easily jumped over by the inspector.

RL Comment: Action to resolve this vulnerability was not apparent and, although further action was not taken to verify that the system could be jumped over, such an action was plausible. Other matters precluded verification of this vulnerability.

PNL Response: PNL, after re-examining this finding, concludes that the present exterior microwave alarm system configuration is adequate. This conclusion is based on sensitivity and zone identification tests performed by PNL Security, Facility Engineering, and Craft Services staff members. These field tests indicated that the exterior microwave system is operating as designed and required minimal sensitivity adjustments. There are no known points where the system can be easily or routinely bypassed by jumping. Also, the 209-E Protected Area utilizes two perimeter alarm systems which are complementary to each other (e.g., exterior microwave and Israeli taut wire).

- Two discrepancies involving taut wire system vulnerabilities had been corrected, but taut sensitivity was identified as a problem during the June 1984 periodic survey.

RL Comment: Although the majority of random tests (32 out of 38) showed good sensitivity during this survey there were some minor sensitivity problems remaining.

PNL Response: The preventative maintenance procedure for the taut wire alarm system has been revised to include the sensitivity by pound weight, per the vendor's specification, required for annunciation during functional testing. Current tests demonstrate the system operated as it was designed to function.

Finding 5 identified over 19 subelements of area and facility security as deficient and requiring prompt attention.

- Repeated alarm system malfunctions prevented alarm testing.

RL Comment: It appeared this problem has been resolved and both perimeter and interior systems were checked during the special survey. Perimeter alarm testing disclosed incomplete or lack of alarm sensor readouts at the primary alarm station for taut wire, microwave and tamper alarms due to the manner in which sensors were wired, i.e., in series and piggy backed to one on the others.

PNL Comment: All 209-E alarm sensors annunciate at the primary alarm station (POC/AMS 2721-E). Several sensor points are in series and the primary alarm monitoring station has a current sensor description list identifying these locations. An updated description list was forwarded to Hanford Patrol for implementation on April 26, 1985, after new sensors were installed and tested (i.e., vault door BMS, etc.).

- The Israeli taut wire system had numerous sensitivity problems during the periodic survey.

RL Comment: The extent of the sensitivity problems have been measurably reduced as previously indicated, but minor sensitivity discrepancies continued, in part due to the lack of implementation for a new preventive maintenance (PM) program. The PM guide to perform sensitive testing had been provided to the PNL maintenance technician on the day of the taut wire testing.

PNL Response: The revised PNL preventative maintenance (PM) program includes monthly functional testing of all 209-E security alarm systems. This was incorporated into the PM system in February 1985. All sections of the taut wire system have been adjusted to function to the vendor's specification.

- Redundant alarm monitoring was not effective due to computer communications link problems. Additionally, there were alarm/sensor identification discrepancies.

RL Comment: As stated earlier identification discrepancies have not been corrected and guidance to the alarm monitoring station (AMS) has not been provided. Due to the absence of a 24-hours Patrol post at the 209-E Area there is no redundant alarm monitoring capability during off shift hours, weekends and holidays. This is a recent (February 4, 1985) change in security at the 209-E Area.

PNL Response: PNL is currently exploring alternative methods to provide redundant alarm monitoring capabilities. As an interim measure, the 209-E Badgehouse will be a manned 24-hour post.

The issue of alarm sensor identification discrepancy was addressed in the PNL Comment to Bullet 1 of this finding.

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- There is no immediate alarm assessment capability at the primary AMS.

RL Comment: No alarm assessment provisions have been made, not were there any plans to fulfill this requirement by PNL. The alarm assessment capability has been further degraded by the lack of a Patrol post at the 209-E Area during off shift hours. Alarms can only be assessed during these periods after a response to the area by Patrol (range of response time three to seven minutes).

PNL Response: At present the 209-E Badgehouse Patrol personnel provide onsite exterior alarm assessment capability. PNL is conducting an engineering design pertaining to the installation of interior CCTV which would provide coverage of both the Critical Assembly and Mix Rooms. The primary alarm station (POC/AMS 2721-E) would have the monitoring capabilities for these cameras. PNL also intends to review other alternative methods to provide for a cost effective assessment of the 209-E Protected Area perimeter.

- The entire alarm system was declared unreliable at the time of the periodic survey due to numerous malfunctions and computer down time.

RL Comment: It appeared this discrepancy has been corrected and the system was stable during the special survey. However, there were indications the system had not provided a continuous 30 days period of trouble free operation.

PNL Response: PNL is continuing to work with Rockwell on computer malfunctions and down time. Rockwell has been responsive to PNL's needs and share an equal concern about these matters. This action will be a continuing effort on both PNL and Rockwell. A 30-day trouble-free period of operation has not occurred to date.

- Patrol personnel stationed at the 209-E Area badgehouse were prohibited from departing the badgehouse to defend the area.

RL Comment: This discrepancy continues to exist during operating hours, i.e., 0730 to 1630, five days a week. There is no Patrol person at the area during other periods, nor is there a check conducted at the area during off shift hours.

PNL Response: 209-E Badgehouse Patrol personnel act in an assessment mode (i.e., eyes and ears) during the initial phase of possible conflict. Once initial assessment has been accomplished, the shift lieutenant or "on scene" commander has the prerogative to relocate the 209-E Patrol personnel to assist in interdiction or containment. Patrol currently conducts a once-every-two-hour facility check of the 209-E during all off-shift periods.

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- The outer fence fabric had not been anchored to within two inches of firm ground.

RL Comment: A check of the fenceline indicated this problem has been corrected.

PNL Response: None required.

- Outer fence fabric was fastened with aluminum tie wires which were easily removable by hand.

RL Comment: Tie wires have been replaced with steel wire and the deficiency resolved.

PNL Response: None required.

- Erosion was identified as a problem at the 209-E Area fencelines.

RL Comment: The problem has been corrected. However, a program to assure ongoing erosion control as necessary was not in evidence.

PNL Response: CML Facility Management, Security, and 209-E staff members are monitoring ground erosion on a continuing basis. Work orders are in place and once an erosion problem is identified, corrective action is initiated.

- Excessive debris buildup along the 209-E Area fencelines hindered Patrol fenceline checks and area assessment.

RL Comment: The debris buildup problem has been corrected. However, a fence-line checks are no longer conducted and area assessment is contingent on a Patrol response during the off-shift hours.

PNL Response: Patrol personnel are instructed to notify PNL verbally and in writing of debris problems. RHO has an open work order to pay for debris removal.

- An old inner fence double leaf gate aided area penetration.

RL Comment: The gate had been welded shut by PNL, but remains deficient.

PNL Response: This gate has been modified to meet Hanford Plant Standards.

Completion date: March 1985

- The outer area gate is ill-designed as a main personnel and vehicle entry point to the 209-E Area and often breaks in the open position.

RL Comment: The gate remains deficient although there are plans to solve the problem.

PNL Response: The vehicle gate has been modified with a support wheel to relieve the pressure on the mechanical mechanism. A personnel gate was installed just to the east of the vehicle gate thereby reducing the use of the vehicle gate.

Completion date: March 1985

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- Lighting along the north perimeter is unsatisfactory.

RL Comment: Some lighting adjustments and additions have been made; however, it is still marginal. Additionally, a night-time check revealed facility entrance lighting was burned out at four out of six doors leading into the facility, and one door is not equipped with lighting. This particular door has been the subject of repeated incidents of being found unlocked.

PNL Response: All exterior light bulbs over the doors have been changed out and an additional light fixture has been installed over the west door. Some lighting adjustments have been made with marginal results. When it was identified that the existing lighting system could not be modified to correct this problem, an Engineering Request was initiated and a project identified to add new light standards and fixtures along the inner fenceline of the north side of the protected area. It is anticipated that this project will be complete in June 1985. Preliminary work is complete, but the lead time for procuring parts is causing a delay in completion.

- A deep gully or depression inside the northwest inner fence with growing vegetation hinders alarm assessment.

RL Comment: Vegetation has been removed; however, the gully remains a problem.

PNL Response: The depression has been filled and graded. There is still a slight depression, but due to buried service cable, it cannot be graded in further. It is PNL's opinion that alarm assessment is no longer hindered.

- Exterior openings at the 209-E Area, Critical Mass Laboratory (CML) are not adequately protected to preclude unauthorized access to the alarm system and building.

RL Comment: Some exterior openings had been partially corrected at the time of the survey. Closer examination of other openings revealed existing marginal grills could be easily pulled free from the openings allowing access to the alarm sensor heads and to the facility. Door alarm checks (three out of four) showed they could be opened well beyond allowable limits prior to an alarm. One exterior door leading to the change room could be opened in excess of six inches before an alarm was triggered. This door is also unlit at night and

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has been repeatedly found unlocked. Due to known alarm sensor head magnetic substitution vulnerabilities, the facility was identified as unsatisfactory. Immediate interim measures were instituted and maintained until these discrepancies were corrected (on the spot) by overtime craft personnel.

PNL Response: All identified openings have had metal plates welded and lag screwed over them. The sensitivity of the door alarms have been adjusted to annunciate within the allowable limits. A problem has been identified concerning the west exterior door that is used as an emergency exit from the CML Change Room. To correct the problem, Facilities Management has requested a new door be installed and the door hinges repaired. The door alarm has been adjusted for sensitivity. Expected completion for the installation of a new door is the end of May 1985.

- Hand-held metal detection devices were not routinely used to scan in and out bound personnel and scans were awkward and ineffective.

RL Comment: The use of hand-held metal detection devices was improved, however, they remain awkward and ineffective.

PNL Response: The 209-E Badgehouse is being modified with the metal detector being repositioned so it will operate properly. When this modification is complete in May 1985, Patrol personnel will not require the use of the hand-held metal detector.

- There is no effective means to examine packages/articles for explosive devices/components.

RL Comment: This discrepancy remains and it has not been addressed in PNL corrective action planning.

PNL Response: At this time, all inspections for explosive devices/components is conducted visually by Patrol personnel. PNL does not feel it is cost effective to install automated explosive detection equipment, based on the radiological assessment performed by PNL on 209-E for the I&E Task Force. In addition, Sandia states that there presently are no detectors which will reliably detect military explosives on the market.

- Limited perimeter CCTV did not provide sufficient clarity for assessment.

RL Comment: CCTV monitors were performing adequately at the time of the survey.

PNL Response: None required.

- Microwave perimeter alarms could be circumvented in front of the unoccupied 209-E Area Badgehouse by scaling over vehicle gates without detection. This condition allows undetected access into the area or the badgehouse.

RL Comment: None

PNL Response: PNL has readjusted the double stacked exterior microwaves to detect a potential intruder attempting to scale over the vehicle gates.

- The 209-E Area unoccupied badgehouse could be entered by removing entry door hinge pins allowing access to both perimeter and facility central alarm station junction boxes in the badgehouse. The badgehouse and area are void of Patrol personnel during off-shift hours, weekends, and holidays.

RL Comment: None

PNL Response: The hinges have been repinned so the hinge pins cannot be removed.

- The 209-E Area Badgehouse interior central alarm station junction boxes do not have tamper alarms. The CML facility interior alarm junction box had a tamper alarm installed, but it was not hooked up. Perimeter alarm junction boxes could not be tamper equipped based on its design and construction. As a result, both facility and perimeter alarms could be electronically bypassed from the 209-E Area Badgehouse with no assurance of an alarm for periods up to 3-1/2 days.

RL Comment: None

PNL Response: The 209-E Area Badgehouse interior alarm station junction boxes have had tamper alarms installed and a new junction box cover installed. All tamper alarms have been inspected by PNL Craft Services, and are functioning properly. An interior IR sensor was also installed in the 209-E Badgehouse for alarm coverage in the event it should be unmanned.

- No area checks are being conducted by security forces during off-shift hours, weekends, or holidays.

RL Comment: None

PNL Response: PNL has requested Hanford Patrol to conduct perimeter area checks of the 209-E Protected Area once every 4 hours during all off-hour periods. At present, this check is being conducted once every 8 hours on the graveyard shift only.

-
- Special facility checks previously conducted by Patrol every two hours and deemed necessary by PNL during off shift hours have been curtailed without additional considerations.

RL Comment: None

PNL Response: The two-hour facility checks conducted by Patrol have been reinitiated.

- PNL has not verified Patrol alarm response times contained in the recently revised 200 East Area contingency plan which indicates the time to be in excess of the five minute minimum requirement.

RL Comment: None

PNL Response: A monthly schedule of Patrol response exercises has been initiated at 209-E. PNL Security is monitoring these exercises in person or in review of the written critique.

Recently, five exercises were conducted with Patrol as a "time and motion" study to evaluate the effectiveness of the security systems and the deployment of Patrol response forces at 209-E. The results of this evaluation will be forwarded to DOE-RL SAS under separate cover.

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Finding 6 Access records for Nuclear Weapons Data (NWD) Sigma Categories are deficient and would not preclude unauthorized access. Additionally, records of Sigma access between PNL and RL-SAS are in conflict with one another.

RL Comments Actions on SIGMA access concerns are progressing, however, reconciliation between DOE and PNL access records are not yet complete. New and innovative procedures have been instituted by PNL personnel security representatives to resolve this finding. However, PNL Safeguards and Security staff should accelerate efforts to close out this finding. Over nine months has elapsed since this finding was identified as requiring prompt action.

During the course of reviewing corrective action regarding SIGMA access controls, it was noted that PNL staff charged with the responsibility to destroy complete SIGMA documents and reports do not possess the necessary SIGMA access approval. Immediate action should be taken to obtain this access for the small number of PNL staff performing this function. Other special access approval should be considered for other programs similarly affected by the destruction process. Barring this action, other alternatives must be pursued to prevent unauthorized access to this special information.

PNL Response As of November 1, 1984, a file-by-file search and review of all PNL records of NWD Sigma Categories was completed and PNL computer records were made consistent with corrective actions necessary to resolve the findings of June 1984.

On December 12, 1984, PNL forwarded a computer listing to D. M. Fredrickson, DOE-RL, SAS, for comparison with their records. In January, 1985 DOE responded with a listing of Sigma Category records listed in DOE-RL records but not on the PNL records. Individual RL-223's were submitted to DOE-RL on February 27, 1985, cancelling NWD access for the more than 200 current and former staff members still listed in DOE records, along with the latest PNL computer listing (dated 85/02/26). To date PNL has not received RL confirmation of the requested cancellations.

The lack of Sigma Category access for PNL staff members involved in the handling and destruction of classified material was a stated concern. A memo to file from James L. Spracklin, Law Enforcement Coordinator, DOE-RL, dated April 10, 1984, (copy attached) dealt with SRD document destruction by Patrol. Despite as indicated in this memo, the contention that such authorization may not be necessary, Battelle submitted requests for Sigma I access for eleven (11) Security staff members involved in the handling and destruction of classified documents. To date eight of these requests have been granted.

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Department of Energy

XC: EA Jones
BJ Merrill

Richard Operations Office
P.O. Box 550
Richland, Washington 99352

3/27/85
vlh

APR 10 1984

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Memo to File

SRD DOCUMENT DESTRUCTION BY PATROL

On April 5, 1984, Mr. Jim Spracklen, RL-SAS, received a call from Major Larry Jones of Hanford Patrol advising an order of destruction from UNC (Fed 480) for documents classified as Secret/Restricted. Major Jones informed Ms. Pat Oliver of UNC that Patrol has not received authorization for the handling of Sigma-level data. The matter was then referred by the parties to UNC Security for resolution.

On April 6, 1984, Mr. Spracklen met with Ms. Phyllis Hansen, RL-ICO, for discussion of the problem. Ms. Hansen advised that it would be an administrative nightmare to attempt to grant Sigma authorization to specified Patrol members who would constantly vary in task assignment to document destruction. Moreover, such authorization is not necessary and is not used even at the DOE-HQ level. The "Q" access authorization held by Patrol personnel sufficiently safeguards the destruction system. Therefore, Patrol can carry out their document destruction duties as per existing procedure.

This information was verbally transmitted to Mr. Bill Rokkan, UNC Security, and Major Jones, Hanford Patrol, on April 6, 1984.

James L. Spracklen

James L. Spracklen
Law Enforcement Coordinator
Physical Security Section
Safeguards and Security Division

SAS:JLS

cc: Bill Rokkan, UNC
Larry Jones, Patrol

*Don - I appreciate the time
you & John spent with us the
other day - Hope this helps you out -*

John

[REDACTED]

[REDACTED]