

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-409/85007(DRSS)

Docket No. 50-409

License No. DPR-45

Licensee: Dairyland Power Cooperative  
2615 East Avenue-South  
La Crosse, WI 54601

Facility Name: La Crosse Boiling Water Reactor

Inspection At: La Crosse Site, Genoa, WI

Inspection Conducted: April 8-12, 1985

Inspectors: *[Signature]*  
W. G. Snell  
Team Leader

4/29/85  
Date

*[Signature]*  
J. P. Patterson

4/29/85  
Date

*[Signature]*  
N. R. Williamsen

4/29/85  
Date

Approved By: *[Signature]*  
M. P. Phillips, Chief  
Emergency Preparedness Section

4/29/85  
Date

Inspection Summary

Inspection on April 8-12, 1985 (Report No. 50-409/85007(DRSS))

Areas Inspected: Routine, unannounced inspection of the following areas of the Emergency Preparedness Program: emergency detection and classification; protective action decisionmaking; notifications and communications; changes to the emergency preparedness program; shift staffing and augmentation; knowledge and performance of duties (training); licensee audits; maintaining emergency preparedness; and licensee actions to correct previously-identified items. The inspection involved 143 inspection-hours onsite by three NRC inspectors and one consultant.

Results: No items of noncompliance or deviations were identified.

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## DETAILS

### 1. Persons Contacted

J. Taylor, Assistant General Manager - DPC  
\*J. Parkyn, Plant Superintendent  
\*R. Morose, Emergency Preparedness Director  
E. Hennen, Environmental Engineer  
\*R. Wery, Quality Assurance Supervisor  
P. Shafer, Radiation Protection Engineer  
\*L. Goodman, Operations Engineer  
\*L. Nelson, Health and Safety Supervisor  
H. Frank, Air Quality Specialist  
D. Weiss, Air Quality Analyst  
\*L. Kelly, Assistant to Operations Supervisor and Training  
M. Johnson, Senior Reactor Operator  
M. Polsean, Shift Supervisor  
\*G. Joseph, Security Supervisor  
\*P. Bronk, Nuclear Engineer  
\*T. Steele, Director, Environmental Affairs  
M. Wilchinski, Reactor Operator (LSO)  
G. Boyd, Operations Supervisor  
R. Cota, Shift Supervisor  
J. Gallaher, Shift Supervisor  
D. Loeffler, Health Physics Technician  
R. Shimshak, Manager Special Nuclear Projects  
R. Christians, LSO  
M. Land, Health Physics Technician  
S. Bussian, Security Captain  
D. Gosnell, Security Guard  
D. Roberts, Security Guard  
K. Ward, Security Guard

\*Denotes those present at the exit meeting on April 12, 1985.

### 2. Licensee Actions on Previously-Identified Emergency Preparedness Violations

#### a. 409/84005-05 (Closed) Severity Level 5 - Training

The inspector reviewed Emergency Plan (Revision 6) Chapter F and EPP-14 dated September 27, 1984. Both these documents now address the specialized training and periodic retraining for repair and damage control teams and security. A review of training records verified that personnel in these area had been trained. This item is closed.

b. 409/84007-xx (Closed) Severity Level 4 - Failure to Make a Timely Classification and Notification for Unusual Event

The responsibility for reviewing the Emergency Action Levels (EALs) and making a subsequent emergency classification rests with the Duty Shift Supervisor with assistance from the Shift Technical Advisor (STA). The Shift Supervisor and all operating personnel were all retrained in the area of EALs and emergency classifications as part of their annual retraining during January and February 1985. The STAs were required to review the NRC Notice of Violation and the licensee's response to the violation as a means of making them more aware of their responsibilities and the requirements in this area. The NRC inspector reviewed the signoff sheet for all nine STAs showing that they had completed this review by February 26, 1985. These actions adequately address NRC concerns in regards to a timely classification. The problems associated with the untimely notifications were mostly hardware problems and are addressed under the Unresolved Item.

3. Licensee Action on Previously-Identified Unresolved Item 409/84018-01 (Closed) Unresolved Item - Communications

This item was the result of an Unusual Event initiated by a loss of offsite power on July 16, 1984, which resulted in a loss of all direct communications capability to Houston County in Minnesota and the State of Minnesota. An examination of this event during a subsequent inspection (Report No. 50-409/84018) lacked sufficient information to address the item. A subsequent review by the licensee has determined that communications capability could not be restored even after offsite power was restored because the telephone system had no surge protection, so when power was knocked out, it also knocked out equipment at the Vernon Telephone Cooperative. This system has been recently modified and a surge protection system is now in place both at the plant and Telephone Cooperative so this type of failure should not occur in the future.

In addition, the issue was raised over the adequacy of a backup communications capability to the State of Minnesota and Houston County in Minnesota. 10 CFR Part 50, Appendix E, Section IV.E.9, requires a primary and backup communications capability between a facility and contiguous State/local governments within the plume exposure pathway. At LACBWR, if the telephone systems are lost (e.g., via a loss of onsite and offsite power) the present method to contact the State of Minnesota or Houston County would be via a radio communication to the Vernon County Sheriff in Wisconsin who would relay the message. After continued discussion with the licensee, the inspectors determined that there is a separate microwave link that connects between the LACBWR Control Room and GENOA 3, that does stay activated even if LACBWR loses all onsite and offsite power. This system link could have been used during the July 16, 1984 incident to make offsite notifications to the State of Minnesota and Houston County in Minnesota. In addition, this communication link is listed in Appendix F of EPP-2. The availability of this system does

address NRC concerns over the adequacy of backup communications to offsite agencies. However, the procedure for notification should be revised to better address the availability of this microwave link.

This item is closed.

4. Licensee Actions on Previously-Identified Emergency Preparedness Open Items

a. 409/83020-03 (Closed) PA Announcements

Sections 4.3, 4.4, 4.5 and 4.6 of EPP-2, Issue 17, dated February 13, 1985, for Alert, Site Area Emergency, General Emergency and De-escalation were examined. In each case, the procedures state that a PA announcement is to be made for the escalation and de-escalation of each of these emergency classes as well as deactivation of the emergency organization. Since the procedures now specify that the PA announcements will be given, this should eliminate this as a weakness as identified in the last two exercises. Therefore, this item will be closed; however, this area will continue to be examined in future exercises.

b. 409/84006-02 (Closed) Review and Revise Telephone Numbers in EPP-2

An examination of EPP-2 dated April 10, 1985 determined that the telephone numbers in EPP-2 had been reviewed, and where appropriate, the prefix "1" was part of the telephone number. This item is closed.

c. 409/84013-01 (Closed) ERD and ECD Responsibility

The inspector reviewed Section 1.1 of Chapter A of Emergency Plan, Revision 6, dated April 4, 1985, and determined that it provides for assumption of ERD and ECD responsibilities, if the Shift Supervisor becomes incapacitated. This item is closed.

d. 409/84013-02 (Closed) Fuel Damaging EALs

The licensee reviewed the EALs referencing fuel damage and concluded no changes to the EALs were necessary. The licensee is aware that the event for 1% fuel degradation is overclassified compared to NUREG-0654, Appendix 1 guidance. This item is closed.

e. 409/84013-03 (Closed) System/Equipment Failure or Malfunction EAL

Emergency Plan, Table E-1, for loss of vital DC power was changed in Revision 6 dated April 1, 1985 to classify as site area emergency.

However, the equivalent EAL in the Emergency Plan procedure (and the one most likely to be used to classify an event) had not been changed.

Since the EALs in the plan have been appropriately revised, this item is closed. However, a new Open Item 409/85007-01 will be established to track the incorporation of these changes into the EALs in EPP-1.

f. 409/84013-04 (Closed) Failure of Reactor Protection System EAL

The inspector reviewed the licensee's response to this item which was to revise the EAL in the Emergency Plan section to clarify scrams without automatic rod insertion and the subsequent actions for cases where rods could be inserted manually (alert) or not inserted (site area emergency). Revision 6 to the Emergency Plan dated April 4, 1985 included these changes. However, the EAL section of EPP-1, which is most likely to be used during emergencies, had not been changed. Since the EALs in the plan have been appropriately revised, this item is closed. However, a new Open Item No. 409/85007-01 will be established to track the incorporation of these changes into the EALs in EPP-1.

g. 409/84013-05 (Closed) Review of EALs with State and Local Governments

The inspectors reviewed Section 1.1 of Chapter E to the Emergency Plan and verified that the plan now includes a statement that the EALs will be reviewed on an annual basis with State and local governmental authorities. This item is closed.

h. 409/84013-06 (Closed) Initial and Follow-up Messages

Section E.2.2 of the April 1985 revision to the Emergency Plan was reviewed and determined to adequately specify the information to be provided to State and local governmental agencies in initial and follow-up messages. This item is closed.

i. 409/84013-07 (Closed) Power Sources for Communications Systems

Section D.2.1 of the April 1985 revision to the Emergency Plan was examined and determined to describe the power sources for the available communication systems. This item is closed.

j. 409/84013-08 (Closed) Dissemination of Information to Public

Emergency Plan, Revision 6, dated April 4, 1985 has been clarified so that it now specifies that the review, updating, and mailing of the public information brochure will be done annually. This item is closed.

k. 409/84013-09 (Closed) Meteorological Monitoring Program

Section D.2.3.1 of the April 1985 revision to the Emergency Plan was reviewed and was determined to provide an updated and accurate description of the meteorological monitoring system at the LACBWR site. This item is closed.

1. 409/84013-10 (Closed) OSC Supplies and Integration into Emergency Program

The inspector reviewed Section 1.2 of Chapter D to the Emergency Plan dated April 4, 1985, which included a description of the OSC, its activation, and the integration with the TSC and Control Room. Also stated was the fact that the OSC location and locker room alternate OSC have the same habitability with independent air supply as the TSC and Control Room. Protective clothing and respiratory protection equipment are stored near the locker room alternate OSC which is located one level below the OSC lunchroom. This item is closed.

m. 409/84013-11 (Closed) Training

Section 1.1.1 of Chapter F to the Emergency Plan, Revision 6, dated April 4, 1985 was reviewed and determined to state that basic information on the Emergency Plan would be included as annual training for onsite personnel not part of the emergency response organization.

This type of training will be repeated on an annual basis. The inspector confirmed that this training was included as part of the General Employee Training conducted in February 1985. This item is closed.

n. 409/RP-00T-1 (Closed) Regulatory Improvement Program

Although this item was closed in Inspection Report No. 50-409/84018, additional aspects of this item were examined during the April 8-12, 1985 inspection. All items, a through m, of Section T to the Regulatory Improvement Program have been reviewed and determined to be acceptable.

5. Emergency Detection and Classification (82201)

The inspectors reviewed the LACBWR Emergency Action Levels (EALs) in the LACBWR Emergency Plan, Table E-1, Revision 5, issued August 1984 and the LACBWR Emergency Plan Procedures (EPPs) in EPP-1, Issue 9, dated September 27, 1984. The inspector also reviewed Revision 6 to the Emergency Plan which was dated April 4, 1985, with several changes in the EALs. However, these changes had not been incorporated into EPP-1 at the time of the inspection.

As a result of this review, the inspectors determined that there was a discrepancy in the EAL for radiological effluent releases between the plan and EPP-1. Table E-1 in the plan (page E-13) refers to the SPING 4 "high" alarm and in EPP-1 (page 10) it refers to the SPING 4 "alert" alarm. Since these are not the same alarms, the discrepancy must be corrected and will be tracked under Open Item No. 409/85007-02.

The inspectors also noted several additional areas that warrant improvements. For example, the EAL for radiological effluent releases (air) gave problems to the shift operating personnel during walkthroughs. This EAL contained an overlap in values for the release rates because of difference times given for releases to establish cumulative whole body and infant thyroid doses. It is a complex EAL (2 pages long just for site area emergency) and not easily used. Some of the complications arose because the "puff" or short release is not clearly differentiated from a sustained release.

In addition, Table E-1 of EALs in the plan is not the same table as contained in EPP-1. The EALs in EPP-1 were "gridded" which made them much easier to read. Having two separate tables also invites problems with inconsistencies and errors.

The Shift Supervisor, who is on shift at all times, fills the position of Emergency Response Director when an emergency occurs. His duties, responsibilities and actions are clearly stated in the Emergency Plan and emergency procedures along with the line of succession in case he becomes incapacitated.

The duties and responsibilities of the Shift Technical Advisor are also outlined in the procedures. Provisions for an annual review of EALs with State and local agencies had been added to Revision 6 to the Emergency Plan. State and local agencies have met with the licensee to discuss, review and agree with EALs on an annual basis. This review of EALs took place on August 8, 1984.

Based on the above review, the following weakness must be addressed to achieve an acceptable program.

- Correct the discrepancy for the radiological effluent release EAL between Table E-1 of the plan that refers to the SPING 4 "high" alarm and EPP-1 which refers to the SPING 4 "alert" alarm.

In addition, the following items should be considered for improvement:

- Revise the radiological effluent release (air) EAL to make it easier and less complicated to use.
- Maintain only one table of EALs administratively, and place the same table in both the plan and procedures to eliminate the potential for errors.

#### 6. Protective Action Decisionmaking (82202)

The Shift Supervisor is responsible on a 24-hour-per-day basis for protective action decisionmaking until relieved by the Emergency Response Director. The Emergency Plan and Emergency Plan Procedures clearly state these responsibilities and assure authority and guidance for formulating recommendations consistent with program guidance. The

system established at LACBWR is adequate to carry out recommendations as they relate to specific plant conditions through to offsite actions.

Walkthroughs were used to confirm the ability of shift personnel and those individuals responsible for relieving the shift personnel to assess accidents and make protective action recommendations.

Included with walkthroughs was the ability to make protective action recommendations based on calculations of offsite doses based on release data. This was done using both a handheld calculator and the computerized program for dose assessment. In both cases, the protective action recommendations were proper and the two methods showed good agreement.

The inspectors determined that offsite officials with responsibility and authority for protective action decisionmaking were able to be reached on a 24-hour basis.

Based on the above review, this portion of the licensee's program is acceptable.

7. Notifications and Communications (82203)

The inspector reviewed the licensee's notification procedures in EPP-2 dated April 10, 1985, and determined they were adequate to ensure the alerting, notifying, and activation of emergency response personnel as necessary for each emergency classification. The procedures were adequate to ensure the correct and timely notification of offsite organizations. Although provisions have been made as to the content of the initial messages to offsite authorities, the specifics of these messages is currently an open item (409/83020-02) that the licensee has committed to resolve by the June 1985 exercise.

Communications equipment in the emergency response facilities was determined to be adequate.

Records were reviewed to verify that the following communications tests were being conducted as specified in Chapter F of the Emergency Plan, EPP-3 and EPP-21: monthly tests of the LACBWR PABX, microwave network, high frequency radio, ENS red phone, HPN and NAWAS; monthly silent test, quarterly growl test, and annual full operational test of the siren notification system; and, annual postcard inventory of the alert notification radios. All tests were determined to have been implemented as required.

During the review of EPP-2, a detailed examination was made of the layout of this procedure for making notifications to offsite organizations. In general, EPP-2 is very large, redundant and contains inconsistencies that appear to invite problems. For example, one of the telephone numbers for the Vernon County Sheriff occurs in ten different places in the procedure, while a second number for the Sheriff occurs in two places and a third number in only one place. Since most of the telephone numbers are already contained in Appendices to EPP-2, having them also contained

in the text appears to add unnecessarily to the length of EPP-2 without speeding up the use of the procedure. It is the NRC's recommendation that all telephone numbers be removed from the text of procedures and placed in a single Appendix to the procedures. This would facilitate the review and revision of numbers with a minimum of errors without inhibiting access to the numbers.

Based on the above review, this portion of the licensee's program is acceptable. However, the following item is recommended for improvement:

- ° All telephone numbers occurring in the EPPs should be placed into an appendix, and remove them from the text of the procedures.

8. Changes to the Emergency Preparedness Program (82204)

The Emergency Plan is to be reviewed annually per Section 3.3 of Chapter F to the Emergency Plan. The latest version of the plan examined was dated April 4, 1985. A review of documentation determined that Revision 6 of the plan was properly reviewed and approved before being issued. Significant changes in the emergency program were verified to have been incorporated into the Emergency Plan, as well as the Implementing Procedures and required training, with exception of the discrepancies in EALs between the Plan and procedures. Only one change regarding elimination of several EALs was determined to potentially downgrade the effectiveness of the plan, and the licensee had requested approval from the NRC before implementing these changes.

The inspector reviewed documentation to ensure that the Emergency Plan Implementing Procedures (EPPs) were being adequately reviewed and approved. Per Administrative Control Procedure 07.1, all EPPs have been reviewed and updated within the past two years. When changes are made in the EPPs, a review of these changes is required by the Operations Supervisor, QA Supervisor, Emergency Preparedness Coordinator, and Health and Safety Supervisor, followed by the Plant Superintendent. The one exception to this is that for telephone number changes, only the Plant Superintendent's approval is necessary. A review of the changes to the EPPs indicated that all the above signoffs and approvals had been obtained prior to issuance as required.

Based on the above review, this portion of the licensee's program is acceptable.

9. Shift Staffing and Augmentation (82205)

The shift staffing numbers and functional capabilities are contained in Table A-1 of the Emergency Plan, Revision 6, dated April 4, 1985. This recent revision to the plan deleted the position of Radiation Protection Engineering Specialist from Table A-1. Deleting this position did not decrease the committed to onshift complement of personnel. However, it does place the number of personnel necessary to respond and staff several of the emergency organization positions at an absolute minimum. The

positions of the Cooperative Radiological Assessment Director (CRAD) and the In-field Radiological Assessment Director (IRAD) in the EOF only have two persons each that could fill these positions on a rotating shift of 12 hours as specified in EPP-2. This also means at least two of the five HP-Techs would have to fill the position of Onsite Radiological Assessment Director (ORAD) in the TSC. The licensee has stated a new person is to be hired to assist in health and safety and related training, but no decision has been made as to how or where this individual will fit into the emergency organization. The licensee has committed to resolving this problem by July 1, 1985. The licensee has an agreement with INPO for assistance in obtaining the help of other INPO member organizations. Because of the potential for problems in being able to staff and maintain an adequate emergency organization, the NRC believes the person to be hired should be qualified to fill any or all of the above emergency positions. Progress in filling this additional position will be tracked under Open Item No. 409/85007-03.

The inspectors verified that an administrative system was in place to augment offshift personnel as needed. EPP-2 specifies the emergency organization positions which must be filled and Appendices B, C, D, E and G give the name and (except for Appendix G) the phone numbers for the personnel who can fill these positions. Appendices B and C contained the primary personnel to staff the TSC and EOF, while Appendix D listed supplemental EOF personnel, Appendix E the JPIC personnel, and Appendix G listed additional plant personnel for operations and radiological support.

To ensure that shift augmentation could adequately be conducted by members of the security force as specified by EPP-2, walkthroughs were conducted with three security personnel. Although all three guards were able to make the appropriate notifications, it appeared to be more because of adequate training rather than because of good procedures. The guards relied on memory to accomplish certain tasks that were not always consistent with what the procedures specified, and demonstrated a lack of good familiarity with the procedures. The licensee should review the notification procedures for shift augmentation with the security personnel to ensure that an easily understandable and implementable procedure methodology is in effect.

Shift augmentation drills which are required semiannually by EPP-3 were examined. Records of shift augmentation drills were reviewed and found to adequately demonstrate shift augmentation.

Based on the above review, this portion of the licensee's program is acceptable. However, because of potential problems in the licensee's ability to fill required emergency organization positions, the following item will be tracked.

- ° The licensee has committed to hire an additional person to assist in health and safety and related training, but no decision has been made as to how or where this individual

will fit into the emergency organization. The NRC believes this position should be filled with an individual qualified to fill the positions of CRAD, IRAD and/or ORAD in the emergency organization.

10. Knowledge and Performance of Duties (Training) (82206)

The inspectors reviewed the licensee's training program as it applied to the Emergency Preparedness Program, including Issue 3 of EPP-14, Emergency Plan Training, dated September 27, 1984. Training records for Shift Supervisors, Plant Superintendent, TSC personnel, Radiological Assessment Directors, Health Physics (HP) Technicians, EOF personnel, and security personnel were examined by the inspector and found to be satisfactory. The off-duty HP technicians who serve as Alternate Onsite Radiological Assessment Directors have received annual training on dose assessment using both hand calculators and computer programs. One HP satisfactorily demonstrated his competence in dose assessment during a walkthrough.

Walkthroughs by the inspector with two Emergency Control Directors (EOF) and two Operations and Radiological Parameters Communicators were also satisfactory. Walkthroughs were held with two Emergency Response Directors (ERD), six Shift Supervisors qualified to act as ERD (this included two licensed senior operators (LSO) qualified to act as acting SS/ERD) and the Radiological Assessment Director to determine their abilities to detect and classify emergencies, make notifications, and recommend protective actions. Performance on the walkthroughs varied from satisfactory to excellent. All were able to classify various events and all were familiar enough with the Emergency Plan Procedures to initiate onsite and offsite protection action recommendations until relieved by the Emergency Response Director.

Based on the above review, this portion of the licensee's program is acceptable.

11. Licensee Audits (82210)

The most recent annual independent audit of the Emergency Preparedness Program was conducted during October 1984 as required by the Emergency Plan and Technical Specification 6.5.2.8. The audit report was issued on October 25, 1984; approved by the Quality Assurance (QA) Supervisor and reviewed by the Plant Superintendent. The format included a set of questions for each audit area. These areas included the Emergency Plan, Training, Prompt Notification System, Emergency Exercises, and Inventories. The status of previous emergency preparedness open items was also addressed.

The inspector reviewed the findings and follow ups on items that were not completed by the audit dates. Annual respiratory protection training was not conducted and documented as required. A response dated December 27, 1984 confirmed that action had been taken, and that over 90% of the respiratory protection training was completed. Drills and the annual exercise are being critiqued, and suggestions resulting from the

critiques are being acted upon by the licensee. A November 7, 1984 internal memorandum from the Emergency Planning Director to the Plant Superintendent contained a list of 37 recommendations for improving emergency preparedness as a result of the June 1984 exercise. These were a combination of NRC findings and licensee findings. Fourteen of these items have been acted upon. Of the remaining 23, several are being reviewed "for consideration"; but all 23 have not been acted upon at this date. Plant management and corporate management (for EOF items) should delegate staff responsibility for these items and set a time deadline. The 9-month delay in addressing these items from the June 1984 exercise is too long to serve as an effective training and learning tool. In addition, Section IV.F.5 of Appendix E to 10 CFR Part 50 requires that any weaknesses or deficiencies that are identified as a result of exercise or training critiques must be corrected.

Other items addressed in the annual audit included a finding that a second Health Physics (HP) drill was not conducted. This item was responded to by having a second HP drill on December 19, 1984 to meet the semiannual HP drill requirement. Letters of Agreement with offsite support agencies were found to be correct and current including some which were in the process of being updated.

The audit review included the annual review of EALs with State and local governmental agencies. Evaluation of interface with these agencies also was a part of the audit. This interface, particularly related to these agencies participation in the June 1984 exercise, took place on August 8, 1984.

Based on the above findings, this portion of the licensee's program appears to be acceptable; however, the following item must be corrected:

- o The exercise recommendations from the November 7, 1984 memo from the Emergency Planning Director to the Plant Superintendent must be completed before the June 1985 exercise. Specific staff personnel should be assigned by management to resolve the items with a deadline date set for completion.

## 12. Maintaining Emergency Preparedness

The inspector reviewed the Emergency Plan and procedures for maintaining inventories of emergency kits and emergency response facility supplies. Section 4.1 of Chapter F of the plan specifies that inventories of emergency kits and supplies will be conducted at least quarterly and after each use. An examination of records maintained by the Health and Safety Supervisor determined that inventories were being conducted monthly. Inventory lists for decontamination kits, hospital emergency supplies, and emergency kits were contained in Appendix 3 to the Emergency Plan, but the lists did not specify the quantities of any of the items. In addition, EPP-11, Attachment D and EPP-12, Section 7.1, contain equipment/supply lists without a specific frequency of inventory given and which are not included in Appendix 3 to the plan. A spot-check of several kits also

determined that the inventory lists contained in the kits were not signed and dated after each inventory check. These weaknesses concerning the documentation and administration of inventorying emergency kits and supplies will be tracked under Open Item No. 409/85007-04.

The inspector reviewed the letters-of-agreement with offsite agencies and determined that all were signed and updated within the past twenty-four months.

A review of drill records determined that all drills had been performed in accordance with the frequency specified in Section 2.0 of Chapter F of the Emergency Plan.

Based on the above review, the following weakness needs to be corrected to achieve an acceptable program.

- ° Inventory lists of kits and supplies should be included in the Emergency Plan, and should specify the quantities of the items in the kits. In addition, inventory list contained with the kits should be signed and dated after each inventory.

### 13. Post-Accident Liquid Sample System

The inspector observed preparations for and the actual drawing of an undiluted sample using the liquid sample portion of the post-accident sampling (PASS) system. An undiluted sample was drawn for two reasons: (1) because the primary fluid flowmeter was found to be inoperable with a part not immediately available, and (2) because the sample was to be counted to compare with other primary system radiochemistry. Inspectors confirmed that it is possible to obtain the liquid primary system sample using the PASS system. The operations procedure was used successfully in a verbatim step-by-step process. Because the "speed-wagon" was behind a barrier and because the sample was not "too" radioactive, the sample flask was moved to the hot lab without taking the cask and "speed-wagon."

At the hot lab, a number of procedure and hardware problems were noted which would not have precluded analyzing and counting the pass sample if it had been very radioactive, but which would have caused many problems and changes in procedures during actual accident conditions and would have resulted in high, unmonitored exposures to the high levels of radioactivity involved. Some of the discrepancies and problems noted were:

- (1) The hose through which the sample flask was vented and which later served as a vent line was too short to reach the clip up high in the hood. It was stretched a bit to reach and held tension on the sample flask. Connecting this line puts the team's upper body in the high field.
- (2) The liquid sample did not come out of the sample flask and had to be tipped up to make the sample come out.

- (3) The sample collected was less than 10 ml. (The supposed size is 10 ml).
- (4) The syringe specified for use in pulling 0.1 ml sample from the above 10 ml sample is very hard to use and places both hands in the streaming area from the sample. The technician suggested use of a different (one-hand operated) 0.1 ml sample syringe which is longer and faster.
- (5) The procedure in EPP-6 lists equipment to be gathered and then taken to the sample area. This includes extension tongs which are not used at sample area.
- (6) The procedure (EPP-6) requires a check of the turbidity meter, but then never refers to its use.
- (7) Attachment D to EPP-6 has an apparent numerical error: a value of 830 in the 2nd column for noble gas should be 483.
- (8) EPP-6 Step 7.4 refers to one extremity TLD to be worn "on the finger expected to be closest to the sample cylinder." However, more TLDs are needed for both hands, top and bottom.
- (9) The procedure should require periodic changing of gloves in the lab since they would become contaminated at several points in the procedure.

Addressing these above problems will tracked under Open Item No. 409/85007-05.

Based on the above review, the procedure and equipment for actually drawing a diluted sample with the PASS System is acceptable. However, the following item needs to be addressed to achieve an overall acceptable system:

- ° The procedure, technique and hardware for the laboratory portion (analysis) of the PASS sample must be reviewed and upgraded.

#### 14. Exit Meeting

The inspectors met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on April 12, 1985. The inspectors summarized the scope and findings of the inspection, including the open items. The inspectors also discussed the content of the report to determine if the licensee thought any of the information was proprietary. The licensee responded that none of the information should be proprietary.