



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406

ENCLOSURE 9

R3TD2#28

rel NMSS/KSIR  
release all

DEC 12 1990

Docket No. 70-1100

Combustion Engineering  
ATTN: Mr. C. R. Waterman  
Acting Vice President - Nuclear Fuel  
Nuclear Power Systems  
1000 Prospect Hill Road  
Windsor, Connecticut 06095-0500

Gentlemen:

Subject: Inspection Report No. 70-1100/90-08

This refers to the routine, unannounced inspection conducted by Mr. M. Austin and Dr. J. Jang of this office on November 13-16, 1990, of activities authorized by NRC License No. SNM-1067, related to your radiation protection and environmental monitoring programs and to the discussions held by the inspectors with you and members of your staff during and at the conclusion of the inspection. The inspectors also reviewed actions taken in response to previously identified violations and with regard to your implementation of recommendations identified by the NRC in SALP Report 70-1100/88-99. The inspection consisted of selected examination of procedures and representative records, interviews with personnel, and observations and measurements made by the inspectors.

Within the scope of this inspection, no violations were identified. However, we note that additional action with regard to beta dose measurement and beta exposure evaluation is required to close one of the violations (Section 2.1 of the enclosed Inspection report). In addition, several weaknesses were identified in the conduct of your environmental monitoring program (Sections 5.1 and 5.2). Your action to address these items will be reviewed in future inspections.

Your cooperation with us is appreciated.

Sincerely,

James H. Joyner, Chief  
Facilities Radiological Safety  
and Safeguards Branch  
Division of Radiation Safety  
and Safeguards

Enclosure: NRC Region I Inspection Report No. 70-1100/90-08

NN-1

DEC 12 1990

cc w/encl:

A. E. Scherer, Director, Nuclear Licensing

C. B. Brinkman, Manager, Washington Nuclear Operations

Public Document Room (PDR)

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Nuclear Safety Information Center (NSIC)

State of Connecticut

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 70-1100/90-08

Docket No. 70-1100

License No. SNM-1067

Priority 1

Category ULFF

Licensee: Combustion Engineering, Incorporated  
1000 Prospect Hill Road  
Windsor, Connecticut 06095

Facility Name: Nuclear Fuel Manufacturing and Nuclear Laboratories

Inspection At: Windsor, Connecticut

Inspection Conducted: November 13-16, 1990

Inspectors:

M. Austin  
M. A. Austin, Radiation Specialist, Effluents  
Radiation Protection Section (ERPS), Facilities  
Radiological Safety and Safeguards Branch (FRSSB)

11/28/90  
date

for R. J. Borek  
J. Jang, Senior Radiation Specialist, ERPS, FRSSB

11/29/90  
date

Approved by:

for R. J. Borek  
R. J. Borek, Chief, ERPS, FRSSB, Division of  
Radiation Safety and Safeguards

11/29/90  
date

Inspection Summary: Inspection on November 13-16, 1990  
(Report No. 70-1100/90-08)

Areas Inspected: Routine, unannounced inspection by two region-based inspectors of the licensed program including review of radiological controls and environmental monitoring. The inspection also included review of licensee actions on previously identified items and in response to NRC recommendations made in SALP Report 70-1100/88-99.

Results: Within the areas inspected, no violations were noted. However, several weaknesses of the Environmental Monitoring Program were identified (See Section 5.0 of this report for details). With regard to the SALP Report recommendations, it was noted that appropriate actions had been taken by the licensee to implement each of the recommendations in the Radiological Controls functional area.

## DETAILS

### 1.0 Individuals Contacted

- \*\*J. Ballard, Operations Consultant
- \*\*R. Bennett, Manager, Training
- \*\*J. Conant, Manager, Nuclear Material Licensing
- \*W. Graves, Supervisor, Analytical Chemistry
- \*J. Helems, Radiochemist
- \*G. Hess, Nuclear Material Licensing Engineer
- \*S. Pati, Supervisor, Core Components
- \*P. Rosenthal, Program Manager, Radiological and Industrial Safety
- \*\*\*R. Sharkey, Manager, Radiological and Industrial Safety
- \*\*\*R. Vaughan, Plant Manager
- J. Vollaro, Supervisor, Radiological and Industrial Safety
- \*\*C. Waterman, Acting Vice President-Nuclear Fuel

\*Denotes those present at the November 15, exit interview.

\*\*Denotes those present at the November 16, exit interview.

\*\*\*Denotes those present at both exit interviews. The inspectors also interviewed other licensee employees during the inspection.

### 2.0 Review of Previous Violations

The inspector reviewed the information described in the licensee's response, dated September 14, 1990, to the NRC letter dated August 1, 1990, which was enclosed with the NRC Region I Inspection Report No. 70-1100/90-06. That inspection report documented the results of a special inspection conducted to evaluate the information in the licensee's response, dated May 11, 1990, to the Notice of Violation enclosed with NRC Region I Inspection Report No. 70-1100/90-03. Three violations (identified as Items A, B and C in the aforementioned Notice of Violation) remained open and required further examination during an on site inspection in order to be closed by the NRC. The violations described below are identified in the same manner as in the aforementioned Notice of Violation.

#### 2.1 Violation A (1100/90-03-02)

Violation A involved the licensee's failure to complete evaluations to:

1. (Closed) Show that adequate surveys were conducted in the Pellet Shop stack and load area to prove compliance with the dose limits of 10 CFR 20.101(a) and (b);
2. (Open) Determine the adequacy of beta dose measurements to the skin of the whole body, in this case, the face, and;
3. (Open) Determine the adequacy of beta shielding of safety glasses used in the Pellet Shop to ensure compliance with whole body dose limits specified in 10 CFR 20.101(a) or (b).

Regarding Item 1 of this violation, the inspector determined that the licensee now conducted weekly surveys using a portable ion chamber instrument to measure the beta dose rates present at operator workstations in the Pellet Stack and Load area. The inspector reviewed the records of surveys done by the licensee in November 1990. The survey data were recorded on forms that show the locations where the measurements were made, the open window measurements, the closed window measurements, the beta correction factors, and the beta dose rates calculated from these measurements. The inspector observed that the beta dose rates measured by these weekly surveys ranged from approximately 3 to 37 millirads per hour, depending upon the quantity of pellets on the Stack and Load tables and in the nearby storage cabinets. The inspector used a survey instrument to conduct independent measurements in the same locations and observed a similar range of beta dose rates in this area. Based upon this review of records and the observed dose rate measurements, the inspector determined that the licensee was now conducting adequate surveys in the Pellet Stack and Load area. This item is closed.

Regarding Items 2 and 3 of this violation, the inspector reviewed the raw data obtained by the licensee from beta radiation surveys conducted at the Pellet Stack and Load tables during a time period of approximately two months. The licensee designed a study to gather information about the attenuation of beta radiation by protective clothing and safety glasses worn by workers. At the time of the current inspection, the thermoluminescent dosimeter (TLD) measurements obtained from this study were summarized by the Radiological and Industrial Safety (RIS) Program Manager in a handwritten draft format, dated August 3, 1990, which was reviewed by the inspector. The licensee's evaluation of the raw data was not completed, and final conclusions had not been made as of the time of inspection. Relevant to this violation, the inspector used a licensee survey instrument to obtain measurements that indicate that the "salad bar" polycarbonate shield, which was recently installed over the Pellet Stack and Load tables, was essentially 100 percent effective in shielding the skin of the face and the lens of the eyes of workers from further exposure. However, because the evaluation of the beta radiation study data was not complete, the licensee had not yet decided what action would be taken to address the recorded exposures for workers in this area prior to installation of this shield. Furthermore, the licensee had not yet decided what, if any, action would be taken to address all other Pellet Shop workers whose recorded beta exposures were being based upon measurements from TLDs worn beneath their protective clothing. For these reasons, these two items of this violation remain open.

## 2.2 Violation B (1100/90-03-03) (Closed)

Violation B involved the licensee's failure to furnish, within the time period allowed by 10 CFR 20.408, exposure records for seven former licensee employees to the NRC Director of Nuclear Regulatory Research and to former employees following termination of employment.

Regarding this violation, the inspector reviewed RPI-205, "TLD Issue, Control, and Exposure Record Keeping", Revision 1, dated August 24, 1990. RPI-205 was revised to describe the formal mechanism by which the Radiation Protection (RP) office is notified of the departure dates of terminated individuals. The inspector reviewed several exposure record files for individuals who were terminated in 1990. All required reports for the files reviewed by the inspector were issued within 90 days of the termination date. The inspector examined a log book maintained by the RP technician responsible for preparing the summaries of exposure data for the termination reports. The inspector observed that this log book provided a practical mechanism to readily determine the status of all required termination reports and to maintain compliance with 10 CFR 20.408. Based upon these inspector observations, this violation is closed.

### 2.3 Violation C (1100/90-03-04) (Closed)

Violation C involved the licensee's failure to issue "special" dosimeters to Radiation Protection Technicians (RPTs) in accordance with Radiation Protection Instruction (RPI)-205.

Regarding this violation, the inspector found that Revision 1 of RPI-205, dated August 24, 1990, did not contain the requirement for "special" neutron dosimetry for RP technicians. The deletion of this requirement was based, in part, upon a report dated April 25, 1990, from the RP Supervisor to the RP Manager, which provided information on the use of neutron dosimetry within Building 17. This report provided historical data that showed the RP technicians had received no measurable neutron exposures. Based upon this information, the requirement for wearing neutron dosimetry on a routine basis was deleted from RPI-205; however, the procedure still allows for the use of neutron dosimetry during planned, non-routine activities (e.g., maintenance work on the head/shielding of the fluoroscopic equipment). For these reasons, this violation is closed.

### 3.0 Facility Tour

The inspector toured the Pellet Shop area to observe the current status of the deployment of powder-processing equipment from this area. The inspector observed that a "weighing hood" remained in service in the Annex, two "general purpose hoods" remained in service in the Pellet Shop, and a large ceiling-level duct remained open and operational for room air ventilation. All other exhaust inlets within the area had apparently been shutdown or closed. The inspector inquired as to the current status of airflows between the controlled area and the uncontrolled area. The RP Supervisor showed the inspector records of his weekly checks of airflow patterns. These records showed that, on June 25, 1990, within the controlled area, the airflow from the Stack and

Load area into the previous Powder Handling area was beginning to fluctuate because of the gradual elimination of ventilation exhaust points in the Pellet Shop West. However, these records also showed that the licensee had continued to maintain the required airflow pattern from the uncontrolled areas into the controlled areas of the plant. No deviations or violations were observed.

#### 4.0 Licensee Actions in Response to the Systematic Assessment of Licensee Performance (SALP) Report

The inspector reviewed the current status of the licensee's actions taken in response to SALP Report No. 70-1100/88-99, enclosed in the NRC letter dated July 19, 1990. These actions were described in the licensee's October 8, 1990 response to the SALP Report. In particular, the inspector examined the licensee's actions with regard to the NRC recommendations in the SALP Report in the functional area of Radiological Controls.

##### 4.1 Recommendation No. 1

The first SALP Report recommendation made by the NRC to the licensee was: "Promptly fill the Manager, RIS, position with a technically qualified individual".

Regarding this recommendation, the inspector interviewed the individual hired in July 1990 for the position of Manager, RIS. This individual has a Bachelor of Science degree and a Master of Science degree in health physics, and he had acquired approximately two years of applied health physics experience before joining the licensee's RP staff. Although this individual had been in this position for approximately four months at the time of the current inspection, he had already assumed all of the day-to-day responsibilities of the Manager, RIS, and he was also providing the day-to-day technical guidance to the RP Technicians. His assumption of these duties has allowed the Program Manager, RIS, to focus on upgrading RP program requirements, and it has allowed the Supervisor, RIS, to play a more active role in the day-to-day operations of the manufacturing facility. The inspector observed that the Supervisor, RIS, was allowed to spend much more time on direct supervision of the RP technicians than had been observed during in previous inspections. The inspector determined that the individual in the position of Manager, RIS, was technically qualified and had begun to enhance the effectiveness of the overall RP program.

##### 4.2 Recommendation No. 2

The second SALP Report recommendation made by the NRC to the licensee was: "Maintain a technically qualified, professional RP staff".

This recommendation was based upon the observations that, at the end of the most recent SALP period, the licensee had not yet filled the RIS Manager position with a technically qualified individual; and

the licensee's RP technician staff was comprised mostly of outside contractor personnel who were transient workers and did not provide a stable RP organization. The concern regarding the RIS Manager position was addressed in the preceding Section 4.1 of this current inspection report. Regarding the concern about the RP technician staff, the inspector determined during the current inspection that four of the five RP technicians were now licensee employees. Discussions held by the inspector with some of these RP technicians indicated a marked improvement in their confidence in the new RP organization compared to that observed by the inspector in previous inspections. In addition, the recently initiated training program (described in Section 4.3 of this current inspection report) promises to enhance the technical qualifications of the RP technicians. The inspector determined that the licensee has taken and is currently taking actions that should assure it maintains a technically qualified, professional RP staff.

#### 4.3 Recommendation No. 3

The third SALP Report recommendation made by NRC to the licensee was: "Establish and implement an upgraded RP Technician training program".

Regarding this recommendation, the inspector interviewed the licensee's Training Manager. The Training Manager had developed Procedure TP-1, "Radiation Protection and Industrial Safety Technician Training Program", Revision 0, dated July 5, 1990. The inspector reviewed the procedure and found that the Training Manager is responsible for helping develop and coordinate the RP technician training program, but that the actual implementation and recordkeeping of the training is done by the RIS Manager and RIS Supervisor. The inspector interviewed the Manager and Supervisor of RIS regarding the RP technician training program. The inspector reviewed a memo, dated September 14, 1990, from the RIS Manager to the Training Manager, which presented a schedule for twelve separate training sessions, starting October 13, 1990 and concluding by May 4, 1991. The training was planned to include both "technical" and "procedural" subject matter. The inspector found that three of the twelve training sessions had already been held by the time of the current inspection, and that the program was adhering to the aforementioned schedule. The inspector reviewed documentation of the training sessions already completed. The inspector observed that the RP technicians were formally assigned required reading before the actual training session, and each RP technician had been given a personal training handbook. The inspector reviewed examinations, which include multiple choice and essay questions, which must be taken by each RP technician following a training session. Based upon these observations, the inspector determined that the licensee is currently implementing an upgraded RP technician training program.

#### 4.4 Recommendation No. 4

The fourth SALP Report recommendation made by the NRC to the licensee was: "Address and document actions taken on each of Bechtel's recommendations".

Regarding this recommendation, the inspector interviewed the licensee's Operations Consultant, who had been assigned the administrative responsibility to assure that each Bechtel recommendation was addressed and the actions taken to resolve each were documented. Because the 1990 Bechtel Report encompassed all recommendations from the 1988 report that Bechtel still considered relevant, the licensee addressed the 1990 report. The inspector observed that the licensee had identified 98 individual recommendations in the 1990 report, and that licensee management had assigned each one to a specific individual for followup. At the time of the current inspection, the licensee had addressed and closed 58 of the 98 recommendations. The inspector examined a log book, maintained by the Operations Consultant, which contained memos and other paperwork to document the actions that had been taken on those specific recommendations that had already been addressed. The inspector randomly selected a number of recommendations that the licensee had addressed and found the Operations Consultant could readily provide documentation as to what actions had been taken. Based upon these observations, the inspector determined that an effective administrative control was being implemented to assure that the licensee did address and document actions taken on each of Bechtel's recommendations.

#### 4.5 Recommendation No. 5

The fifth SALP report recommendation made by the NRC to the licensee was: "Continue to improve the work place safety attitude".

Regarding this recommendation, the inspector held discussions with a number of employees in their work place. The individuals interviewed expressed a genuinely positive attitude toward work place safety. This inspector personally observed continued improvement in this aspect of the work place environment during recent inspections. Based upon these observations, it appeared that the licensee was continuing to improve the work place safety attitude.

Based upon this review of the SALP report recommendations, the inspector determined that the licensee had initiated actions to address each recommendation. These initial licensee actions appeared appropriate to begin adequate implementation of the recommendations. However, except for Recommendation No. 5, the licensee had not had adequate time to demonstrate that satisfactory implementation could be sustained. The continuation of the licensee's actions in response to these recommendations will be monitored in future inspections.

## 5.0 Environmental Monitoring Program

The inspector reviewed the licensee's Environmental Monitoring Program (EMP) to determine whether the program described in Section 5.2 of the License was effectively implemented. The inspector reviewed the following areas.

- Analytical Procedures and Results
- Quality Control Program for Radiochemistry Laboratory
- Annual Reports

### 5.1 Review of Analytical Procedures and Results

The inspector reviewed the following procedures to determine the adequacy of the analytical method.

- Procedure No. 18, Rev. 1, "Determination of Alpha and Beta Radioactivity in Atmospheric Fallout", June 29, 1989
- Procedure No. 19, Rev. 1, "Determination of Alpha and Beta Radioactivity in Surface and Well Water", June 29, 1989
- Procedure No. 20, Rev. 1, "Determination of Alpha and Beta Radioactivity in Vegetation", June 29, 1989
- Procedure No. 21, Rev. 1, "Determination of Alpha and Beta Radioactivity in Soil and Sediment", June 29, 1989

During the review of the above procedures, the inspector noted that the licensee analyzed gross alpha and beta activities for only the soluble fraction of the media. During the sample preparation, the licensee filtered samples using a Whatman #541 filter paper. The licensee dried the filtrate on the planchet, determined net weight, and counted the material using a proportional counter. The licensee discarded the insoluble fraction. Only the filtrate was used to determine gross alpha and beta activities. The inspector further noted that the licensee did not apply self-absorption correction factors to determine the gross alpha and beta activities. The inspector noted that the licensee had self-absorption correction factors for the gross alpha and beta, but these factors were invalid for the current instrumentation because the factors were determined using the previous proportional counter. The inspector also noted that the licensee used the acid leaching technique for analyzing soil and sediment samples. The resulting leachate may not be representative of the gross alpha and beta activities in soil and sediment samples, depending on the chemical form of the radionuclides. Relative to fallout sampling, the inspector discussed methods of better assessing plant impacts on the environment through the use of improved sampling and analytical techniques. The inspector also noted that the licensee did not calculate the analytical uncertainty

for any of the reported results. Results reported without the associated uncertainties make an environmental assessment of any impact very difficult. The inspector further noted that the licensee did not have written procedures for the total uranium analysis (fluorometric method) of environmental sample media. The licensee has an appropriate uranium analytical procedure for bioassay samples.

Based on the above review and discussion with the licensee, the following areas for improvement were discussed by the inspector with the licensee.

- Reevaluation and update of the above analytical procedures to properly measure gross alpha and beta radioactivity in EMP samples.
- Application of appropriate self-absorption correction factors for the more accurate determination of gross alpha and beta radioactivity in EMP samples.
- Calculation of analytical uncertainties associated with reported results.
- Preparation of more appropriate analytical procedures for the determination of total uranium in EMP samples.

The inspector stated that actions taken in the above areas will be reviewed during subsequent inspections.

## 5.2 Quality Control Program for Radiochemistry Laboratory

The inspector reviewed the licensee's Procedure No. 57, "The Radiochemistry Laboratory Quality Control Program", to determine the accuracy and precision of the analytical measurements for the EMP samples. The licensee wrote this procedure to establish a quality control program for the Radiochemistry Laboratory, in which all EMP samples were analyzed. Although this procedure was written to ensure the accuracy and precision of analytical results, the inspector was not able to evaluate this information because the licensee had not analyzed quality control samples (e.g., spike, and blind duplicate and standard samples) utilizing this procedure. The inspector stated that this area will be reviewed during a subsequent inspection.

The inspector determined that the licensee participates in the EPA cross-check program. The inspector reviewed comparison data for 1989 and 1990 and noted that comparisons were within the licensee's acceptance criteria. However, the inspector noted that the licensee did not analyze all of the EPA cross-check samples in 1989 due to a heavy work load in the Radiochemistry Laboratory.

The inspector reviewed quality control data (efficiency and background) and control charts for the proportional counter. The inspector also reviewed operating voltage for this instrument (plateau checks). The inspector noted that the licensee performed these activities as required by the procedure.

No violations were identified.

### 5.3 Review of Annual Reports

The inspector reviewed the Annual Environmental Monitoring Reports for 1986, 1987, 1988, and 1989. These annual reports provided analytical results of EMP samples and trend analyses. The inspector discussed the trend analyses with the licensee, because the inspector noted that the analytical results for gross beta activity in grass samples were lowest in May 1986. This sample should have exhibited one of the highest beta activity results because of fallout from the Chernobyl accident in 1986. The inspector stated that the current trend analysis technique should be evaluated to assess whether the results are reasonable. The licensee stated that the technique will be reviewed.

No violations were identified.

### 6.0 Exit Meeting

The inspectors met with licensee personnel denoted in Section 1.0 on November 15, 1990, and at the conclusion of the inspection on November 16, 1990. The scope and findings of the inspection were discussed at that time.

ENCLOSURE 10

Responses to Issues Raised in the CE October 8, 1990  
Response Letter

Item 1 Safeguards-Recommendation No. 1

Address the communications/interface problems that have impacted Fundamental Nuclear Material Control Plan (FNMCP) and security plan revisions.

a. Licensee's Comment

Contrary to the implication in the SALP Report, communications and interface problems did not affect the FNMCP, and difficulties with Security Plan submittals are attributable to other factors.

b. NRC Response

Upon reflection we agree that FNMCP revisions were not affected by communications problems, and we have revised the recommendation. However, fragmentation of responsibilities between the two MC&A program managers, during the SALP period, resulted in occasional difficulties with day-to-day operations in this area and the potential for impact on the FNMCP implementation. It is our understanding from your response that, subsequent to the end of the SALP period, meetings were held between the affected parties and any differences have been resolved. With regard to difficulties with the Security Plan submittals, these problems were related to a lack of communications between the licensee's security and licensing staffs. It is our understanding from your response that the communications problems have been resolved through the issuance of an administrative procedure subsequent to the end of the SALP period. That procedure established a uniform system for the preparation, review and submittal of requests to the NRC for license amendments.

Item 2 Radiation Protection - Recommendation No. 4

Address and document actions taken on each of Bechtel's recommendations.

a. Licensee's Comment

Despite the implication in the SALP Report, Combustion Engineering had completed a timely and detailed review of the Bechtel Report.

b. NRC Response

When licensee actions on the 1988 Bechtel Report was reviewed during December 1989, the inspector was informed that only a cursory review of that report had been conducted and no written evaluation was retained. Subsequent to that inspection, the NRC was informed that the licensee had commissioned Bechtel to repeat their study of the facility radiation protection program in early 1990. As a result, little additional action relative to the 1988 report recommendations was taken prior to the end of the SALP period. The 1990 Bechtel study was performed during March 1990, but the report was not issued until May 1990. The NRC acknowledges that the licensee has now evaluated the 1990 report recommendations which incorporated the relevant 1988 report recommendations. However, since this evaluation was not performed until after the end of the SALP period, the SALP recommendation, as stated, was appropriate.

Item 3 Emergency Preparedness - Recommendation No. 1

Conduct a site-wide demonstration of the emergency plan and include offsite support groups (repeat recommendation).

a. Licensee's Comment

We have conducted a site-wide demonstration of our Emergency Plan which does not require evacuation of the entire Windsor site. After careful consideration, we remain convinced the Emergency Plan should not require site evacuation.

b. NRC Response

The above recommendation was made by the NRC to assure that an integrated response to the site emergency plan and the fuel facility emergency plan had been demonstrated. We also believe that an exercise was needed to demonstrate that, if required, the site could be evacuated successfully. Yet, as of the end of the SALP period, only independent exercises of each plan had been conducted. During December 1990, subsequent to the end of the SALP period, the NRC staff observed as the licensee conducted an emergency drill associated with the fuel fabrication facility. During this drill the Site Emergency Director acted as an observer to assure proper implementation of the fuel facility plan. While other buildings on the site, as well as offsite agencies, were contacted, the site emergency plan was not activated during this drill, and no evacuation, other than from Building 17 (the fuel fabrication facility), was made. Thus, the NRC continues to believe that the recommendation, as of the end of the SALP period, was appropriate as written.

With regard to the licensee's statement that the fuel facility emergency plan should not require a site-wide evacuation, subsequent to the end of the SALP period, on November 13, 1990, the licensee submitted a revised Emergency Plan which provided justification for not requiring evacuation of specified buildings at the site. The revised plan addressed only releases from or radiological incidents involving Building 17, but did not evaluate incidents originating in Buildings 5 or 6, which also are licensed for the use of radioactive material.

While the revised Plan was approved by Amendment 20 to the facility license dated November 30, 1990, the implementing license amendment required the licensee to "expand its Emergency Plan to include the criteria and methodology for the emergency response for all affected employees at the Windsor site" by June 30, 1991. In the licensee's letter dated June 27, 1991, requesting amendment of the Emergency Plan, this issue was addressed for Buildings 17 and 6, with the conclusion that "a nuclear accident in either of these buildings would result in no exposures outside controlled areas in excess of the 1 rem effective dose equivalent criterion in 10 CFR 70.22(i)(1)." As a result, the licensee concluded that "all 'affected' personnel would be within a controlled area, and ... covered by the Emergency Plan." If this analysis is correct, there is no need for other site personnel to be evacuated due to nuclear accidents in Buildings 17 or 6. This request is under evaluation by the NRC.

Relative to Building 5, the licensee concluded, in the June 27, 1991, letter and Emergency Plan amendment request, that it also did not need to be covered by an Emergency Plan [at least a plan per 10 CFR 70.22(i)(1)] because "the uranium-235 quantity limits in criticality control areas ... are being reduced below that which would require a criticality monitoring system," and a "license amendment request has been submitted to change License SNM-1067 accordingly." (The latter request was contained in a letter to the NRC dated June 12, 1991.) However, neither letter asserts that, in the event of a nuclear accident, exposures outside Building 5 controlled areas would be less than 1 rem effective dose equivalent. Thus, there is, at present, no assurance that all affected personnel would be within a controlled area and covered by the Emergency Plan. The licensee's request, as contained in the cited letters, are under evaluation by the NRC.

However, on the basis of the licensee's November 30, 1990, revision to the Emergency Plan, as approved in the resulting license amendment, and the requested revisions to the Plan described in the June 12 and 27, 1991, letters, we now recognize that

demonstration of a site-wide evacuation may neither be needed or advisable. However, pending an NRC decision on the June 12 and 27 license amendment requests, we continue to seek licensee demonstration that an acceptable mechanism exists to quickly warn other workers on the Windsor site of an emergency involving NRC-licensed radioactive material that requires sheltering or other actions (including evacuation of the area around the emergency, if necessary) to avoid exposure to the radioactive material. We will continue to review this issue in NRC inspections.

Item 4     Management Controls - Recommendation No. 2

Establish a mechanism to assure that a hazards assessment of site maintenance activities that could affect facility operation is conducted prior to the start of work.

a.     Licensee's Comment

Contrary to the implication in the SALP Report, Combustion Engineering had, and continues to maintain, an effective hazards assessment program. It was, in fact, that program that allowed plant personnel to have prior knowledge of the activities cited in the SALP Report and assisted in our timely and effective response.

b.     NRC Response

The NRC acknowledged in the SALP report that CE had a hazards assessment program in place, and that it generally was effective. However, in at least two instances (the gas line rupture and the loss of electrical power), the program was not successful in preventing incidents that affected Building 17 operation. Accordingly, we believe the statement in the SALP Report (that "there was no indication that there was management involvement to assure that an appropriate hazards assessment was conducted prior to the start of work to determine if the activity could affect the fuel facility operation") is appropriate. Nonetheless, we have modified the recommendation to more accurately reflect our concern. In any case, the actions taken by Combustion Engineering, as indicated below, appear to be appropriate. Subsequent to the end of the SALP period, fuel manufacturing facility management reaffirmed in writing to site maintenance management that an appropriate hazards assessment must be conducted prior to the start of work. In addition, fuel manufacturing facility management assigned the facility maintenance supervisor to review and schedule all planned maintenance activities during the August 1990 plant shutdown maintenance period to assure that the facility would not be adversely effected by personnel injuries or damaged equipment occurrences.

Item 5     Fire Protection - Recommendation No. 1

Develop a written fire pre-plan for the fuel manufacturing facility.

a.     Licensee's Comment

Contrary to the implications in the SALP Report, fire pre-plan information, which includes facility arrangements, hazardous material locations, fire main/fire plug locations and emergency water supply data has been in the possession of the Windsor Safety Complex for years.

b.     NRC Response

The NRC staff now recognizes that its recommendation was not clearly stated. The intent was to ensure that local Poquonock fire personnel had a fire pre-plan to aid in planning for fighting fires in the fuel manufacturing facility.

The licensee stated that this information was available to safety personnel at the centralized Windsor, Connecticut safety complex. The information in the SALP Report was generated following discussions with the local fire chief, and not with safety complex personnel. The local fire chief indicated during the SALP period that some, but not all, required facility information was available to him at the fire house. In any case, updated information was provided to both the Windsor Safety Complex and the local Poquonock Fire Chief during November, 1990 subsequent to the SALP period. As a result, it appears that the intent of the recommendation stated in the SALP Report has been met.

SALP Board Report Revision Sheet

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
15	24	have impacted FNMCP and security plan revisions	could have impacted FNMCP revisions and did impact security plan revisions.
28	38	assure that a hazards assessment of site maintenance activities that could affect facility operation is conducted prior	assure that there is appropriate management involvement in hazards assessments of site maintenance activities that could affect facility operation prior

Basis: It was the intent of the SALP Board to assure that management was appropriately involved in the conduct of hazards assessments of site maintenance activities to ensure that operation of the facility would not be affected. There was no intent to indicate that no hazards assessments were conducted.

August 30, 1990 SALP Management Meeting Attendees

NRC

M. R. Knapp, Director, Division of Radiation Safety and Safeguards (DRSS)  
J. H. Joyner, Division Project Manager, DRSS  
C. J. Haughney, Chief, Fuel Cycle Safety Branch, NMSS  
R. J. Bores, Chief, Effluents Radiation Protection Section  
J. Roth, Project Engineer, DRSS  
M. A. Austin, Radiation Specialist, DRSS

Licensee

S. T. Brewer, President, Nuclear Power Businesses  
C. R. Waterman, Acting Vice President, Nuclear Fuel  
A. E. Scherer, Vice President, Nuclear Quality Systems  
R. E. Vaughan, Plant Manager