

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-315/80-17

Docket No. 50-315

License No. DPR-58

Licensee: American Electric Power
Service Corporation
Indiana and Michigan Electric Company
2 Broadway
New York, NY 10004

Facility Name: Donald C. Cook Nuclear Power Plant,
Unit 1, Bridgman, MI

Investigation Conducted: July 16-30 and November 10, 1980

Investigation At: Bridgman, MI, Glen Ellyn, IL, Bethesda, MD, and New York, NY

Investigator: *C. H. Weil*
C. H. Weil

12/2/80
Date

Reviewed By: *C. E. Norelius*
C. E. Norelius
Assistant to the Director

12/8/80
Date

Investigation Summary

Investigation on July 16-30 and November 10, 1980 (Report No. 50-315/80-17)

Areas Investigated: Special, unannounced investigation concerning alleged violation of the Donald C. Cook Nuclear Plant Radiation Protection Plan by members of the NRC Region III staff in that prior notice of entry into a radiation area was not given to the Plant's Radiation Protection Section, leading to the improper use of the plant's radiation work permit (RWP) system. The investigation involved 45 investigative hours, on and off-site, by one NRC investigator.

Results: It was determined the NRC inspectors informed plant radiation protection personnel of their intention to enter the steam generators and the NRC employees were not advised of the existence of a specific radiation work permit for such entries by radiation protection personnel. The inspectors, however, did not determine that such a RWP was posted, and as a result did not observe established plant radiation protection procedures.

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REASON FOR INVESTIGATION

This investigation was conducted by Nuclear Regulatory Commission Region III (RIII), Glen Ellyn, IL, Investigations Section predicated upon the receipt of information alleging three RIII employees had violated provisions of the Donald C. Cook Nuclear Plant Radiation Protection Plan on June 26, 1980, when the three RIII employees entered a D. C. Cook Nuclear Plant Unit I steam generator, without being listed on the proper Radiation Work Permit (RWP), or notifying the plant's radiation protection section prior to their entry. Also, two RIII employees allegedly had their names added to the RWP after they exited Unit I containment.

SUMMARY OF FACTS

On July 2, 1980, licensee management apprised the NRC RIII Director of information alleging three, RIII, employees had violated RWP rules at the D. C. Cook Nuclear Plant on June 26, 1980, by entering a radiation area, Unit I steam generator No. 2, without notifying the plant radiation protection section, or being listed on the appropriate RWP, prior to their entry into the radiation area. Also, two of the RIII employees allegedly had their names added to the RWP after exiting Unit I containment. Interviews of personnel involved, both licensee and NRC, disclosed the RIII employees informed radiation protection personnel, on June 25th (the day before) and on June 26th (on the morning they entered containment) they would be inspecting inside the Unit I steam generators, but the subject of RWPs was not discussed. The RIII employees requested on June 25 and 26 the radiation readings inside the steam generators, and they were provided with the radiation levels by the plant radiation protection personnel. Key and DuBry stated they checked the posted RWPs, prior to their entry into containment, and found the applicable RWP 728 was posted. DuBry inadvertently entered the numbers 726 on his containment entry time card for the applicable RWP number. The RIII employees stated they also told a Radiation Protection Specialist (Lehrer) inside Unit I containment of their intention to enter and inspect the steam generators. Lehrer obtained the paper coveralls required by the applicable RWP for entry into No. 2 steam generator for the RIII employees. Lehrer instructed the RIII employees to wear the coveralls inside the generator. The RIII employees stated they were not aware of the existence of a RWP specifically applicable for entry into the No. 2 steam generator, and felt the RWP applicable to enter Unit I lower containment, on which they were listed, was sufficient for entry into the steam generators, as the steam generators were within the Unit I lower containment. The RIII employees maintained they did not request to have their names added to the RWP after they had exited containment on June 26th, and they surmised their names had been added at the direction of radiation protection personnel. Holland, the Radiation Protection Technician who added the names, stated the RIII employees approached him at approximately 2:00 p.m., June 26, 1980, and asked him to add their names to the RWPs 728 and 930. Radiation protection supervisors stated the only reason to add a name to a RWP was to attribute a radiation exposure to a specific RWP and radiation hazard. Additionally, the supervisors stated it was an acceptable practice to add the name to a RWP, especially an extended radiation work permit, to assure accountability of the radiation exposure.

DETAILS

1. Personnel Contacted

Indiana and Michigan Electric Company (I&M)

D. V. Shaller, Plant Manger
B. A. Svensson, Assistant Plant Manager
E. A. Smarrella, Technical Superintendent
J. F. Stietzel, Quality Assurance Supervisor
D. C. Palmer, Plant Radiation Safety Supervisor
P. Holland, Radiation Protection Specialist
J. M. Hoss, Radiation Protection Supervisor
D. A. Schroeder, Radiation Protection Supervisor
F. A. Arsenault, Security Division Chief

American Electric Power Service Corporation

R. S. Hunter, Senior Vice President-Construction
J. G. Del Percio, Senior Licensing Engineer
M. F. Scaramellino, Engineer

Nuclear Manpower Company, Incorporated (NUMANCO)

P. L. DiChiara, Radiation Protection Supervisor
S. E. Lehrer, Radiation Protection Technician

NRC RIII

N. DuBry, Resident Inspector - D. C. Cook
W. Key, Reactor Inspector
J. Schapker, Reactor Inspector
E. Swanson, Senior Resident Inspector - D. C. Cook

2. SCOPE

This investigation was conducted to review allegations that three RIII employees had violated the Donald C. Cook Nuclear Plant Radiation Protection Plan by entering steam generator No. 2 of the D. C. Cook Plant Unit I on June 26, 1980, without giving prior notice to the plant's radiation protection section, or being listed on the applicable RWP, prior to entering the generator, a radiation area. All facets of this investigation, except obtaining the information in paragraph 19 of this report, were conducted with the assistance of Mr. Jude G. Del Percio, Senior Licensing Engineer, American Electric Power Service Corporation.

3. RECEIPT OF ALLEGATIONS

On July 2, 1980, Mr. Rober S. Hunter, Senior Vice President - Construction and New York Engineering, American Electric Power Service Corporation,

apprised Mr. James G. Keppler, Director, NRC RIII, of information pertaining to the failure to comply with Donald C. Cook Nuclear Plant regulations by three RIII employees. Hunter advised, on June 26, 1980, three RIII employees (Neil DuBry, William Key and Jerome Schapker) were inside D. C. Cook Unit I containment and had entered the No. 2 steam generator. Allegedly, their entry into the steam generator was done without prior notification to the plant's radiation protection section and without insuring they were listed on the RWP applicable to entry into the steam generator. Also, the names of two RIII employees (Key and Schapker) were added to the appropriate RWP after they had exited the steam generator and Unit I containment.

4. Interview of Plant Radiation Safety Supervisor

On July 16-18, 1980, David C. Palmer, I&M Plant Radiation Safety Supervisor, was interviewed and provided the following information:

On June 26, 1980, he was advised, by support radiation technicians (employees of NUMANCO, the contract radiation protection firm at the D. C. Cook Plant), of an incident where three RIII employees had apparently violated RWP procedures at the D. C. Cook Plant. The support radiation technicians, Stephen Lehrer and Peter DiChiara, had advised him on June 26, 1980, that three RIII employees (Neil DuBry, William Key, and Jerome Schapker) had entered the secondary side of steam generator No. 2 of D. C. Cook Unit I without notifying the plant radiation protection section prior to their entry.

Lehrer was assigned as the roving radiation protection technician inside Unit I containment on Jun 26, 1980. Lehrer found the three RIII employees inside Unit I containment, and questioned them as to their intentions. The three RIII employees advised Lehrer they intended to inspect inside Unit I, No. 2 steam generator. At that time Lehrer observed none of the three RIII employees had paper coveralls with them. Since paper coveralls were required to be worn while inside the steam generators, Lehrer advised the three RIII employees that he (Lehrer) would obtain the paper coveralls for them. Lehrer left Unit I containment to obtain the paper coveralls and in doing so came upon his supervisor, DiChiara. DiChiara and Lehrer briefly discussed why Lehrer was attempting to obtain paper coveralls. Lehrer advised DiChiara of the conversation with the three RIII employees, and Lehrer returned to Unit I containment with the paper coveralls. DiChiara decided to check the RWP covering entry into the steam generators. DiChiara learned RWP 930 covered entry into the Unit I, No. 2 steam generator, and DiChiara discovered none of the three RIII employees were listed on RWP 930. RWP 930, required in part, prior notification of the Radiation Protection Section, the wearing of paper coveralls and wearing proper dosimetry. Subsequently, DiChiara contacted Lehrer. DiChiara instructed Lehrer to locate the three RIII employees and to escort them out of the Unit I containment. Lehrer found the three RIII employees at steam generator No. 2. One RIII employee, Key, was inside the steam generator; a second RIII employee, DuBry, was partially in the upper manway to the steam generator; and, the third RIII employee, Schapker, was outside the steam generator. Lehrer escorted the three RIII employees out of Unit I the containment. Once the three RIII employees were out of



containment, DiChiara spoke with the three RIII employees at the Radiation Protection Office. At that point DiChiara discovered none of the three RIII employees had worn a high range (0-1 R) dosimeter into the steam generator, as required by RWP 930.

Palmer collected information to prepare a condition report of the incident on June 17, 1980. While collecting the information to prepare the condition report, Palmer found the names of Key and Schapker were listed on RWP 930. He contacted Paul Holland, an I&M Radiation Specialist, and found Holland had added the two names to RWP 930. Palmer inquired of Holland of the circumstances surrounding the addition of Key and Schapker to RWP 930. Holland advised Palmer, Key and Schapker had approached him (Holland) on the afternoon of June 26, 1980, and they had requested that Holland add their names to RWP 930. Holland advised Palmer, he (Holland) was certain of the time and date of adding the names to RWP 930, as he had had to add another name (unrecalled) to RWP 728 (RWP 728 covered QA/QC inspections of Unit I Lower Containment). Holland advised Palmer, he (Holland) added the names of Key and Schapker to RWPs 728 and 930 at the same time he added the name of the unrecalled individual on the afternoon of June 26, 1980.

Palmer reviewed the time in-and-out cards for entry into Unit I containment for the three RIII employees. Key and Schapker had entered the number 728 on the card in the "destination/job" block. DuBry had entered the number 726 under the heading of "destination/job." Palmer reviewed RWP 726 and learned that RWP concerned entry into the crane bay and concrete mixing room, and not entry into Unit I containment. Palmer surmised the entry of RWP 726 on DuBry's in-and-out card was in error. Palmer believed DuBry intended to have entered RWP 526, which was an "extended" RWP for tours and inspection of Units I and II lower containment, lower volume annulus, and instrument rooms.

During subsequent interviews of Palmer, it was learned RWPs were prepared in three copies. One copy was posted at the access point, a second copy at the job site, and the third copy was given to the Shift Operating Engineer. Palmer continued, the yellow, or second copy of the a RWP was not necessarily posted at or near the job site inside the containment, as paper was not permitted inside containment. Palmer stated as a matter of course a second copy of RWP would be posted at or near the entry point to containment. Additionally, Palmer advised RWPs had not been prepared for entry into any of the other three, Unit I, steam generators.

Also, Palmer advised the radiation level inside steam generator No. 2 had been measured on June 25, 1980. The radiation levels were measured at 30-50 mR/hr. in the vicinity of the upper man-way of the steam generator. The radiation level in the vicinity of the inlet nozzles measured from 800 mR/hr to 1 R/hr. Palmer provided a copy of the Condition Report, C/R No. 12-7-80-195, dated June 27, 1980, pertaining to the incident.

Additionally, Palmer stated, names of personnel entering containment, after a RWP had been initially written, could be added to that RWP in order to accurately account for the reason a person was exposed to

radiation. Palmer advised one of the purposes of an extended RWP was to have a means to record radiation exposures for such broad topics as plant tours. Also, names are added to an extended RWP when a person receives a radiation dose in excess of 10 mR/hr. Palmer stated names are not added to RWPs when a low exposure of less than 10 mR/hr has been received.

5. Review of Condition Reports

On July 16, 1980, D. C. Cook Nuclear Plant Condition Report Number 12-7-80-195, dated June 27, 1980, was reviewed. This report pertained to the entry by two RIII employees into the secondary side of Unit I steam generator No. 2 without the correct RWP and the proper dosimetry. The review of the Condition Report disclosed essentially the same information as provided by Palmer. The Condition Report under review crossed referenced five, other Condition Reports. Two of the five referenced Condition Reports were similar in nature to the Condition Report written on June 26, 1980, concerning the RIII employees. A review of these two other Condition Reports disclosed:

C/R 2-5-80-152, dated May 9, 1980. Three I&M maintenance employees entered the lower containment annulus of Unit II to finish a job. The RWP, No. 629, for that job had expired at midnight on May 7, 1980, and RWP 629 was cancelled upon its expiration. The three maintenance employees entered the containment on May 8, 1980, without realizing the RWP 629 had been cancelled.

C/R 1-6-80-187, dated June 26, 1980. On June 24, 1980, a contractor QA inspector was found in the pipe tunnel of Unit I. The inspector had been picking up discarded weld rod and other items. Also, he entered radiation areas which required special protective measures, and he had not been aware of these requirements. At the time the inspector was found, he was not wearing the proper anti-contamination clothing and he was not listed on the appropriate RWP. Upon questioning the inspector, by radiation protection personnel, it was found the inspector was not aware of the radiation protection requirements for the area in which he had been found.

Copies of the Condition Reports identified above are attached as Exhibits I, II, and III.

6. Review of Radiation Protection Plan

On July 16, 1980, the D. C. Cook Nuclear Plant Radiation Protection Plan was reviewed. Section F, beginning at page 61 of the Plan, revision 3, states in part,

"F. RADIATION WORK PERMIT

"The purpose of a Radiation Work Permit system is primarily to help control the exposure of plant personnel to radiological hazards...



"There are two types of Radiation Work Permits, Regular and Extended. Regular Radiation Work Permit will be used for a specific job that is a non-routine job or infrequently performed job, or a job that is such in nature or done in such a location that radiological hazards may differ significantly at the time. An Extended Radiation Work Permit shall only be authorized for a specific time period and specific job or task of repetitive nature as long as the radiological conditions are not likely to change abruptly.

"A Radiation Work Permit shall be required for any job which entails any of the following conditions:

- "1. Entry to Reactor Containment is required.
- "2. Work is to be performed at any Posted area...."
- "4. Any work involving changes (withdrawing, uncovering, opening, valving, disassembling, moving) that have a potential for causing significant unexpected increases in radiation or contamination levels...

"Any individual may request a Radiation Work Permit, should it appear to them the conditions do or will warrant it. Normally, the responsibility for initiating a Radiation Work Permit shall lie with the supervisor or foreman directly concerned with the work. Either the Shift Operating Engineer, the Operating Engineer, or Radiation Protection Section personnel may require that a Radiation Work Permit be obtained for the job, should it appear to them that conditions do or will warranted it.

"Whenever a Radiation Work Permit is required for a job, the supervisor in charge of that job shall obtain a Radiation Work Permit form and fill out in triplicate all of the necessary information...

"The Radiation Work Permit shall not be valid until it is signed by the supervisor or foreman of the work group, the Radiation Protection Supervisor, or someone authorized by him, and the Shift Operating Engineer. Once all the signatures are obtained, the original shall be returned to the Radiation Protection Section, the first copy shall be prominently posted at thw (sic) entrance to work area, and a second copy kept in the Shift Operating Engineer's office. The copies of the Radiation Work Permit posted at the work entries and in the Shift Operating Engineer's Office shall be left posted until the job is completed, or time limitation has expired, at which time they shall be removed by Radiation Protection personnel.

"Any time an entry is made into a Controlled Area to perform work covered by an RWP, the number of that RWP shall be entered under "Job" on the check-in, and check-out card each time such an entry is made.

"Once a Radiation Work Permit has been authorized, personnel shall not deviated (sic) from the conditions of the permit without the authorization of the Radiation Protection Supervisor, some authorized by him for the Shift Operating Engineer..."



A copy of Section F of the Radiological Protection Plan is attached (Exhibit IX).

7. Review of Radiation Protection Training Records

On July 17-18, 1980, the radiation protection training records of the D. C. Cook Nuclear Plant were reviewed. This review disclosed the following test scores on the examinations for radiation protection training taken by the three RIII employees:

<u>Name:</u>	<u>Date:</u>	<u>Test Score:</u>
DuBry	5/20/80	88%
Key	6/04/79	92%
Key	6/12/80	100%
Schapker	6/25/80	82%

The review of the radiation protection training examination taken by DuBry on May 20, 1980, disclosed DuBry missed three of twenty-five questions. Two of those missed questions pertained directly to RWPs. These questions were:

"6. To enter a Radiation Area you must have a Radiation Work Permit?"

DuBry marked the answer "True". The corrected copy of DuBry's examination had the answer "False" marked by the person correcting the examination paper.

"19. In order to perform a specific job in a posted radiation or contaminated area, you must obtain:

"A. A job order authorization form.

"B. A radiation work permit.

"C. A welding and burning permit.

DuBry's answered this question by marking the answer "A". The person correcting DuBry's examination paper remarked this question "B".

Examination papers for Key and Schapker were not available for review.

Subsequent to the review of the radiation protection training examinations, the radiation protection training video tape "Radiation Work Permits" was viewed. The tape was estimated to be ten minutes in duration and covered five topics, which were:

- a. The purpose of a Radiation Work Permit.
- b. When a Radiation Work Permit is required.
- c. The contents of a Radiation Work Permit and who prepared the form.
- d. The posting and determination of Radiation Work Permit.
- e. A definition and the use of Extended Radiation Work Permit.



Two points were emphasized in the video tape. First, when radiation work permits are required. These were described as: entry to the reactor containment; work in a posted area; working on or inspecting highly contaminated radioactive equipment; work involving changes to system; and, entry into high radiation areas. Second, the individual is responsible for his own radiation protection.

8. Interview of Contract Radiation Protection Technician

On July 16-17, 1980, Stephen E. Lehrer, NUMANCO Radiation Protection Technician, was interviewed and provided the following information.

NUMANCO is under contract to provide radiation protection assistance inside the D. C. Cook Nuclear Power Plant Unit I during the refueling outage.

On June 26, 1980, he was working as a Radiation Protection Specialist inside Unit I containment. Sometime during that morning, he encountered three RIII employees inside the Unit I containment. He could not identify the three RIII employees by name.

He first observed the three RIII employees at the Unit I step-off pad. He asked the RIII employees where they were going, and they advised him they were going into the steam generators. He advised the three NRC employees that a requirement existed for them to have paper coveralls to go inside the steam generators. The RIII employees stated to Lehrer the RWP did not require them to have paper coveralls. Lehrer advised the RIII employees that a requirement did exist for the paper coveralls, and wearing paper coveralls would be necessary for their entry into the steam generators. Lehrer advised the RIII employees that he would obtain the paper coveralls for them. Lehrer departed the area of the step-off pad to get the paper coveralls. In doing so, he met his supervisor, Peter DiChiara. DiChiara asked Lehrer why the paper coveralls were needed, and Lehrer responded by saying he was obtaining the paper coveralls for three RIII employees. Lehrer obtained the paper coveralls and returned to the Unit I step-off pad, where he found the RIII employees waiting for him. Lehrer gave the paper coveralls to the three RIII employees and they departed. At that time Lehrer did not note the type and number of dosimetry devices worn by each of the RIII employees. A few minutes later Lehrer was notified by DiChiara that the RIII employees were not listed on the RWP for entry into the steam generators. DiChiara instructed Lehrer to locate the RIII employees and to escort them out of the containment. Lehrer proceeded to steam generators numbers 1 and 4 in his attempt to locate the RIII employees. He found steam generators 1 and 4 were closed, and he did not find any sign of the RIII employees. Lehrer then went to generator No. 2, where he found the three RIII employees. Lehrer stated one of the three (subsequently identified as Key) was fully inside steam generator No. 2. A second RIII employee (subsequently identified as DuBry) was in the upper manway to steam generator No. 2. The third RIII employee (subsequently identified as Schapker) was outside of the upper manway to steam generator No. 2. Lehrer informed the RIII employees that he (LEHRER) had been instructed to escort them out

of the containment. The RIII employees went with him as far as the Unit 1 step-off pad, where the three RIII employees exited the containment. Lehrer did not observe the RIII employees after that.

9. Interview of Contract Radiation Protection Supervisor

On July 16-17, 1980, Peter L. DiChiara, NUMANCO Radiation Protection Supervisor, was interviewed and provided the following information:

On June 26, 1980, he was in the vicinity of the Unit I airlock on his regular tour of containment. He encountered Lehrer outside of containment. Lehrer said he needed paper coveralls for three RIII employees. DiChiara proceeded to the access control area and reviewed the RWP board. He found RWP 728, which pertained to entrance into the lower containment of Unit I. He also found RWP 930, which concerned entry into steam generator No. 2. He noticed that none of the three RIII employees was listed on either RWP. He removed RWP 930 from the board and brought it into the Radiation Protection Office to rectify the problem. He also notified Lehrer to locate the RIII employees, and to escort them out of the containment. He met the three RIII employees at the Radiation Protection Office, and they discussed the problem. He assumed the RIII employees had "spoken to the house techs" (I&M radiation protection personnel) prior to their entry into containment. He based his assumption upon the fact that the RIII employees were aware of the radiation levels inside the steam generator. He asked the RIII employees if they, had actually entered steam generator No. 2, and they informed him that they had not. The RIII employees stated they were looking at nozzles outside of steam generator No. 2. While at the Radiation Protection Office, DiChiara noted none of the RIII employees was wearing the proper dosimetry (both low and high range dosimeters) for entering the steam generators. DiChiara also noted at the time of the conversation, all three RIII employees were dressed in street clothes and were not in anti-contamination clothing.

DiChiara stated it was his belief that it was the individual's responsibility for reading the appropriate RWP prior to the individual's entry to containment, or any radiation areas.

10. Interview of Radiation Protection Supervisor

On July 17, 1980, James M. Hoss, I&M Radiation Protection Supervisor, was interviewed and provided the following information:

On the morning of June 26, 1980, Schapker stopped in the TLD room to be issued a TLD. Schapker advised Hoss the RIII employees would be looking at the steam generators. Subsequently, Hoss issued the TLD and authorized Schapker a maximum radiation exposure limit of 1 Rem.

DuBry was with Schapker at that time. DuBry inquired as to the radiation levels inside the steam generators, and Hoss provided DuBry with the information. Hoss could not recall anything being specifically said about RWPs, or any of the RIII employees specifically stating they intended to go inside the steam generators.



11. Interview of Radiation Protection Specialist

On July 17-18, 1980, Paul Holland, I&M Radiation Protection Specialist, was interviewed and provided the following information.

He was responsible for originally preparing RWP 930 on June 19, 1980. He initially prepared RWP 930 listing three individuals. Subsequently, two names were added by his supervisor, Jim Hoss. After that, Holland added the names Key and Schapker to RWP 930.

On the afternoon of June 26, 1980, two RIII employees (Key and Schapker) came to the TLD room where Holland was working. The RIII employees had with them the original copy of RWP 930, and they asked Holland to add their names to that RWP. Holland added the names of Key and Schapker to RWP 930. Additionally, the two RIII employees requested that Holland add their names to RWP 728, which covered entry into the lower containment of Unit I. Holland complied with their request, and added their names to RWP 728. Their names, Key and Schapker, were added to that RWP after the name of Scaramellino.

The time at which Scaramellino's name was added to RWP 728 stood out in Holland's mind, as Holland had to refer to Scaramellino's In-and-Out time card. Holland recalled he had added Scaramellino's name to RWP 728 at approximately 2:00 p.m., on June 26, 1980. (A review of Scaramellino's In-and Out card disclosed a time clock entry of 14.2 (2:12 p.m.) on June 26.)

12. Review of Radiation Work Permits

On July 16-17, 1980, Radiation Work Permits 728 and 930 were reviewed.

RWP 728, dated June 2, 1980 concerned entry into the lower containment of Unit I for QA/QC inspections. Under the heading "Special instructions" was the notation "for requirements refer to RWP, that applies to a job being worked on, and any special requirement." The headings entitled, "Continuous R. P. Coverage Required," and "Notify R. P. prior to start," were marked "No."

Review of the supplemental page to RWP 728 disclosed the names Scaramellino, Key and Schapker were entered, sequentially, on the supplemental page, and initialed, "PH". Also, the name Key appeared earlier on that page with the same TLD number, 7953. A copy of RWP 728 is attached (Exhibit IV).

RWP 930, dated June 19, 1980, concerned entry into Unit I lower containment to "Inspect upper moisture separator on No. 2 S/G, thru upper manway." Under the heading "Special Instructions" was the entry, "1. clean area must be set up on grating prior to start. 2. take off ductfeet and outer gloves prior to entering clean area and put-on clean part. 3. put on clean paper coveralls prior to entering S/G." The RWP was marked "Semi-continuous R. P. coverage required" and "Notify R. P. prior to start." RWP 930 required 0-1 R, self-reading dosimetry. A copy of RWP is attached (Exhibit V).



13. Interview of American Electric Power Engineer

On July 23, 1980, Mario F. Scaramellino, Engineer, American Electric Power Corporation, was telephonically interviewed. Scaramellino advised he had been at the D. C. Cook Nuclear Power Plant on June 26, 1980, and that he had entered Unit I Containment on that day. Scaramellino did not recall either seeing, or not seeing, any RIII employees in the vicinity of the TLD room or containment that day.

(A review of Scaramellino's check-in and check-out card disclosed he had entered at approximately 2:12 p.m., June 26, 1980, and departed at 4:06 p.m., June 26, 1980).

14. Interview of Radiation Protection Supervisor

On July 18, 1980, Darrell A. Schroeder, I&M Radiation Protection Supervisor, was interviewed and provided the following information:

On the morning of June 26, 1980, he was working in the D. C. Cook Nuclear Plant's Radiation Protection Office. DiChiara, supera, entered the office and telephoned the NUMANCO trailer to have paper coveralls delivered. Some time later DuBry entered the Radiation Protection Office. DuBry and DiChiara engaged in conversation regarding entry into the steam generators. DuBry made a statement the RIII employees could not get into steam generator No. 2. While in the Radiation Protection Office, DuBry was dressed in street clothes and DuBry was not wearing any radiation dosimetry.

Schroeder recalled, approximately one hour after the conversation between DuBry and DiChiara, two RIII employees (Schroeder could not recall their names) came to the Radiation Protection Office, and asked that their names be added to a RWP. Schroeder could not recall any other details of the conversation.

Schroeder stated the D. C. Cook Nuclear Plant Radiation Protection Section needed to have the names of individuals listed on the correct RWP in order to assess the radiation dosage received during a particular job. Schroeder stated it was perfectly acceptable to add an individual's name to a RWP, espically an entended RWP, after an individual had been in a radiation area, so that the radiation dose received would be assessed to the correct job and radiation area. Also, in the instances where a Condition Report has been written for the violation of RWP procedures, the names of the individuals involved would be entered onto the appropriate RWP by Radiation Protection Section Personnel, in order to accurately account for the radiation dose received.

15. Interview of Security Division Chief

On July 16-18, 1980, Frank A. Arsenault, I&M Security Division Chief, was interviewed and provided the following information:

Prior to June 26, 1980, William Key had been issued a D. C. Cook Nuclear Plant badge, ACAD No. 3183 (ACAD-Automatic Control Access Device). ACAD 3183 was a white background, picture, badge. The white background indicated that Key was not an employee of the plant site. ACAD 3183 authorized Key unescorted access to Area 1 (the area closest to the entrance portals of the plant and office). On June 26, 1980, Key was issued a new badge, ACAD 3831. ACAD 3831 upgraded Key's access to include the plant's vital areas. ACAD 3831 was also marked with a gold stripe indicating that Key had completed radiation protection training and permitted Key to have unescorted access into containment.

Arsenault advised ACAD 3183 was immediately cancelled within the security computer upon the issuance of ACAD 3831.

Arsenault further advised a security guard had been posted outside the airlock of Unit I during the refueling outage. The guard's duties at that post were to check the TLD numbers of those persons entering the containment, to log the people entering and exiting containment, and to notify the Radiation Protection Office of any matters when a radiation protection question arose. A copy of the Personnel Log for the guard post on June 26, 1980 was provided by Arsenault. Review of that Personnel Log indicated Schapker, DuBry, and Key entered Unit I containment at 9:20 a.m. and exited at 9:55 a.m.

A subsequent review of Security Department records disclosed DuBry had escort status and had received radiation protection training. The records also indicated Schapker had received radiation protection training, but was not permitted to act as an escort. Arsenault stated Key, under ACAD 3831, was permitted unescorted entry into the Unit I containment.

16. Interview of William Key

On July 23-24, 1980, William Key, RIII Reactor Inspector, was interviewed and provided the following information:

He had been going to the D. C. Cook Nuclear Plant since June 10, 1980, to look at various projects undergoing repair/modification during the plant's refueling outage. He completed plant radiation protection training on/about June 12, 1980. He had been placed on RWPs 727, 728, 729, allowing him entry into Unit I upper and lower containment and the Auxiliary Building. He thought the three RWP's were the only RWPs applicable to him during this period, as the three RWPs covered all of the areas to which he needed access. He first entered Unit I, lower containment, under RWP 728, on June 11, 1980. From June 11 until June 26, 1980, he was using a white background, picture badge for entry into the D. C. Cook Nuclear Plant.

During the period June 24-27, 1980, he was accompanied at the D. C. Cook Nuclear Plant by Jerome Schapker, also a RIII reactor inspector. Schapker accompanied Key on this trip in a training status. June 26, 1980, was the only day during that period that he and Schapker entered Unit I containment.

On June 25, 1980, Schapker attended the D. C. Cook Radiation Protection Training Class. On the afternoon of June 25, 1980, Schapker and Neil DuBry (RIII Resident Inspector) went to the plant's TLD room to have a TLD issued to Schapker. The Radiation Protection Office had not been provided with Schapker's radiation protection training scores at that time, and TLD was not issued to Schapker until the morning of June 26, 1980.

On June 26, 1980, they (DuBry, Key, and Schapker) decided to inspect the damage to Unit I, steam generator No. 2. They went to the Radiation Protection Office and obtained Schapker's TLD. While in the Radiation Protection Office, Key asked a radiation protection specialist (name unknown) for the radiation readings inside steam generator No. 2. The radiation protection specialist advised Key the radiation level inside steam generator No. 2 were less than 20 mR/hr. Key thought, but was not certain, that DuBry also asked for the radiation levels inside the steam generators, including No. 2 at that time. Key did not ask the radiation protection specialist if a RWP was specifically applicable to the steam generators, as he assumed it was the radiation protection specialist's job to inform him (Key) of the existence of any RWP in addition to the three RWPs, 727-729, which were applicable to his entry into Unit I upper and lower containment and the Auxiliary Building.

After leaving the Radiation Protection Office, they went to the dressing room and put-on anti-contamination clothing. They then went to the time clock and prepared in-and-out time cards. He entered RWP 728 on his time card, as he thought RWP 728, which was for access to Unit I lower containment, was sufficient to cover entry into the steam generators. (The Unit I steam generators at the D. C. Cook Nuclear Power Plant are within the lower containment). Key looked at the RWP bulletin board and found RWP 728 was still posted and applicable to entry into Unit I lower containment. It did not occur to him to look for any other RWPs, as he felt having his name on 3 RWPs (727, 728, 729) was sufficient to allow him access into radiation areas of the plant.

He did not recall if Schapker's name had been entered on RWP 728 prior to their entry into containment on June 26, 1980. He advised Schapker to record RWP 728 on Schapker's time card as the destination/job inside containment, as he (Key) felt RWP 728 was the correct RWP for entering containment on June 26, 1980.

After preparing the time cards, the RIII employees proceeded to the Unit I airlock, prior to which they were stopped by a security guard. The guard recorded their TLD numbers, and they surrendered their security badges to the guard. After this, they entered the air lock.

Upon entering containment, they were stopped by a radiation protection specialist at the bottom of the ladder. This radiation protection specialist asked where they were going, and they advised him they were going into steam generator No. 2. The radiation protection specialist asked them if they had paper coveralls. They told the radiation protection specialist they did not need paper coveralls for entry into the steam



generators, as the RWP did not specify the need for paper coveralls. The radiation protection specialist called for and subsequently received a box of paper coveralls. The radiation protection specialist provided them with the paper coveralls to wear inside the steam generator. They were told to put on the paper coveralls prior to entering the steam generator, and to take them off after leaving the steam generator. They then proceeded to steam generator No. 2 and, upon arrival, found it was sealed and a blower was blocking their access to it. They decided not to disturb the seal on steam generator No. 2, but to proceed to steam generator No. 3 to inspect it for damage similar to that previously photographed inside steam generator No. 2. (Plant personnel had previously reported and photographed damage inside steam generator No. 2).

Key entered steam generator No. 3 through the upper manway, and DuBry was in the manway, when the radiation protection specialist, who had given them the paper coveralls, came up the ladder. The radiation protection specialist informed Schapker and DuBry that he had been instructed to escort the RIII employees out of containment. Key stated, he, DuBry, and Schapker complied with his request, and they exited containment. The radiation protection specialist did not give a reason for their having to leave the containment; Key assumed the reason for leaving containment was that his security, picture badge had only a white background, which indicated he was a non-employee. Also, the badge did not bear the gold stripe, which would indicate he had successfully completed radiation protection training. They exited containment, entered the time-out of containment on their time cards, and dressed into their street clothes.

After dressing in their street clothes, they went to the Radiation Protection Office to determine why they have been required to leave containment. At the Radiation Protection Office, they were informed they had violated RWP 930, which covered entry into steam generator No. 2. Key stated he had not been aware the existence of RWP 930, and he felt RWP 728 was sufficient to cover their entry into the containment and the steam generators on that morning.

The radiation protection specialist in the office advised Key that RWP 930 specifically covered entry into steam generator No. 2, and was the only RWP for entry into that steam generator. Key stated to the radiation protection specialist that neither he nor the two other NRC employees had entered steam generator No. 2.

Key stated that, had he known of the existence of RWP 930 for entry into steam generator No. 2 prior to his entry into containment on June 26, 1980, he would have taken the time to have had his name entered on RWP 930. Key continued, it was his belief an individual was personally responsible for his own radiation safety, and for that reason Key had a personal practice of going directly to his area of interest and not wandering about the plant.

Key stated the only times he was in the Radiation Protection Office on June 26, 1980, was prior to and immediately after their entry into containment on that day. Key stated he did not return to the Radiation

Protection Office that afternoon. Key stated he did not present either RWP 728 or 930 to a radiation protection specialist to have his or Schapker's name added to those RWPs. Key stated he did not ask any of the radiation protection specialists to add any names to RWP 930, after he became aware of the existence of RWP 930. He surmised their names were added to the RWPs by the radiation protection specialists immediately after the conversation between the RIII employees and the radiation protection specialist on the morning of June 26, 1980. Key stated he did not return to the Radiation Protection Office at any time after the morning of June 26, 1980. Key advised he spent the afternoon of June 26 in the D. C. Cook Plant Quality Control Office reviewing radiographs.

Additionally, Key advised he had worn a TLD and a low range dosimeter (0-200 mR/hr) while in containment on June 26, 1980, and he had not been appaised by any radiation protection specialists to wear a high range dosimeter (0-1 R/Hr).

17. Interview of Jerome Schapker

On June 23-24, 1980, Jerome Schapker, RIII Reactor Inspector, was interviewed and provided essentially the same information as Key.

On the afternoon of June 25, 1980, he and DuBry went to the TLD room to be issued a TLD. He was not issued a TLD at that time, as the Radiation Protection Section had not received his radiation protection training scores from the Training Section. On the morning of June 26, 1980, he, along with Neil DuBry and William Key, went to the Radiation Protection Office to be issued a TLD badge. He received a TLD from the radiation protection technician on duty (name unknown). While in the Radiation Protection Office, both DuBry and Key told the radiation protection technician working there (name unknown), they (DuBry, Key, and Schapker) were going into containment to inspect inside the steam generators. Both Key and DuBry asked the radiation protection technician to give them the radiation levels inside the Unit I steam generators, and the radiation protection technician did so. No one spoke of RWPs at that time. The radiation protection technician informed Schapker he would need anti-contamination clothing. They (DuBry, Key and Schapker) dressed in the anti-contamination clothing, and went to the time clock. At Key's instruction, Schapker entered RWP 728 on the time card as the reason for entering containment. Key had looked at the posted RWPs and found the RWP number for their entry. Schapker assumed, since Key had read RWP 728, all was in order, and he did not read RWP 728. It was his understanding that he, along with Key, were listed on RWPs 727, 728, and 729. Those three RWPs covered entry into upper and lower containment of Unit I and the Auxiliary Building.

They entered containment and were stopped by a radiation protection technician, who got them paper coveralls. At the time they entered containment they were wearing their film badges, TLDs and low range dosimeters (0-200 m/R).



They went to steam generator No. 2 and found it was closed. They went to steam generator No. 3, and Key entered that steam generator, DuBry was in the steam generator No. 3 manway, when the radiation protection technician informed them they were to be escorted out of containment.

They did not know why they had been asked to leave containment, but thought it was because Key had used the wrong security badge. Schapker could not recall seeing any RWPs posted in the vicinity of either steam generator.

They left containment, and were informed by another radiation protection technician that they did not have a valid RWP, RWP 930, for entering the steam generators. Schapker checked the RWP board and found RWP 930 was not posted.

Schapker stated he did not return to the Radiation Protection Office on the afternoon of June 26, 1980, and he did not present either RWP 728 or RWP 930 to a radiation protection technician to have his, or Key's, name added to those RWPs, and he did not request anyone to add their names to either RWP 728 or RWP 930.

18. Interview of Neil DuBry

On July 29, 1980, Neil DuBry, NRC Resident Inspector, D. C. Cook Nuclear Power Plant, was interviewed at NRC Headquarters, Bethesda, MD, and provided the following information:

At approximately 2-3:00 p.m., June 25, 1980, he and Jerome Schapker went to the TLD room at the D. C. Cook Nuclear Power Plant, to obtain a TLD for Schapker. DuBry was about to take Schapker on a tour of the Auxiliary Building. DuBry was aware that Schapker would need to wear a TLD during the tour. They went to the TLD room and spoke to a radiation protection technician, described by DuBry as a tall, white, male with blonde hair (possibly identifiable as Paul Holland). DuBry advised the technician they would need a TLD for Schapker. The technician advised DuBry the Radiation Protection Section had not received the final scores for radiation protection training taken by Schapker, and a TLD could not be issued until the scores had been received. At that time, DuBry advised the technician that three RIII NRC employees (DuBry, Key and Schapker) would be inspecting the thermal sleeves of the steam generators of Unit 1 on the morning of June 26, 1980.

At approximately 9:00 a.m., June 26, 1980, DuBry met Key and Schapker in the NRC Resident Inspector's office and they proceeded to the Radiation Protection Office to obtain Schapker's TLD. Schapker obtained a TLD from the on duty Radiation Protection Supervisor, Jim Hoss. While in the Radiation Protection Office DuBry asked Hoss for the radiation levels inside the steam generators. DuBry could not recall Hoss's specific answer, but did recall that he and Hoss had some discussion over radiation levels being higher in the feed ring area of the steam generator than at other locations in the generator. DuBry stated he talked in general terms, but



thought he made it clear to Hoss that the three RIII employees would be entering all of the Unit I steam generators, as they needed to inspect the inside of the generators.

The three RIII employees suited up in anti-contamination clothing and proceeded to the time clock. DuBry checked the RWP board and found the three general RWPs 727, 728, and 729 were posted and appeared to be in order. Also, he had on his mind that he was covered for entry into Unit I containment under RWP 526, which was an extended RWP for tours of Unit I containment. However, he inadvertently entered the number 726 for the appropriate RWP number. DuBry stated he never saw RWP 930 posted on the RWP board.

Upon entering Unit I they were met at the step-off pad by a radiation protection technician. The technician asked where they were going, and they replied they were going to inspect inside the steam generators. The technician informed them they would need to wear paper coveralls inside the steam generator. The technician advised them that he would obtain the paper coveralls, and they waited until the technician returned with them.

They proceeded to steam generator No. 2, where they inspected the outside of the nozzles. They went up the ladder to the upper manway, and found steam generator No. 2 was closed. They decided they did not want to disturb the seals on the manway, and they left steam generator No. 2.

They went to steam generator No. 3, and found it was open. Key was the first to go inside steam generator No. 3, and DuBry followed. DuBry was partially in the manway, when the radiation protection technician came up to them and advised they were to be escorted out of containment.

DuBry checked out of access control and went to the Radiation Protection Office. While at the Radiation Protection Office he was informed by a radiation protection technician (possibly identified as DiChiara) the three RIII employees had not been named on RWP 930, which covered access into steam generator No. 2. DuBry stated he spent about 45 minutes in the Radiation Protection Office discussing this matter, and other problems. Schapker and Key departed the Radiation Protection Office and returned to the NRC Resident Inspector's Office.

DuBry stated, he thought access to the steam generator was covered under the two extended RWPs 526 and 728. (Both RWP 526 and RWP 728 allowed access to Unit I lower containment in which the steam generators are found at the D. C. Cook Nuclear Plant). DuBry stated he was not aware of the existence of RWP 930 until after he had been escorted out of containment. DuBry continued, he had notified the Radiation Protection Office of his intention to enter the steam generators to inspect the interiors prior to entering containment, and he felt that this was sufficient notification to the Radiation Protection Section that he and the other RIII employees would be going inside the steam generators. DuBry stated that at the time of his entry into containment on June 26, 1980, he was wearing his TLD, his film badge, and a low range dosimeter (0-200 m/R). DuBry stated that he was never informed of the need for a high range dosimeter (0-1 R) for entry into the steam generators.



Additionally, DuBry advised, on June 27, 1980, he had prepared a memo for his supervisor describing the circumstances surrounding the incident on June 26, 1980. A copy of DuBry's memo is attached (Exhibit VI). DuBry stated the dates recorded on his memo were in error, and June 26 and 27, 1980, should actually read June 25 and 26, 1980, on the memo.

19. Review of Related Documents

On July 29, 1980, Eric Swanson, NRC Senior Resident Inspector, D. C. Cook Nuclear Plant, provided a copy of a memorandum to all shift operating engineers. This memorandum dated July 29, 1980, numbered 80-02 from R. S. Lease, Operations Superintendent, stated in part, "A week ago we provided a guide to take some visitors into Unit 1 containment. The visitors did not get properly signed in with radiation protection for which we received a condition report. Contact had been made with R/P but total communication did not take place. The communication problem was somewhat in both sending and receiving." A copy of this memo is attached as Exhibit VI.

20. Movement Chronology

A chronology of the movements of the three NRC employees at D. C. Cook Nuclear Power Plant, on June 25-26, 1980, was prepared. The information base for this chronology consists of the interviews reported in the previous paragraphs, times recorded on the Access Control In-and-Out time cards, and information retrievable through the security computer system recordings of entries for the Automatic Control Assess Device (ACAD) cards (security badges) for DuBry, Key, and Schapker on those dates. A copy of this chronology is attached as Exhibit VIII.

21. On November 10, 1980, the results of this investigation were discussed during a meeting in New York, NY, between Mr. Robert S. Hunter, Executive Vice President - Construction and New York Engineering, American Electric Power Corporation, and Mr. James G. Keppler, Director, NRC, Region III.

Exhibits:

- I. Copy of Condition Report 12-7-80-195, June 27, 1980.
- II. Copy of Condition Report 2-5-80-152, June 9, 1980.
- III. Copy of Condition Report 1-6-80-187, June 26, 1980.
- IV. Copy of Radiation Work Permit 728, June 2, 1980.
- V. Copy of Radiation Work Permit 930, June 19, 1980.
- VI. Copy of DuBry Memo.
- VII. Copy of Operations Memo 80-82, July 29, 1980.
- VIII. Copy of Movement Chronology.
- IX. Copy of Radiological Protection Plan, Section F.



TO: PLANT MANAGER

(2) DATE: 6-27-80 TIME: _____

(3) Category A B C D (E) F

Classified By: [Signature]

(5) LER/AEO NO.: NA

DUE BY: NA

(6) Item Reported On Entry to Steam Generator
Secondary side without proper RWP,
dosimetry, or equipment.

(7) Plant Conditions:
Unit No. 1 Mode 6 Power Level %
Unit No. 2 Mode 1 Power Level 100 %

(8) Description of Condition/Event Date 26 June 80 Event Time _____ Unit Affected 1
Two NRC inspectors entered the secondary side of Steam Generator
#12 without correct RWP's, dosimetry, or equipment. A third inspector
was prepared to enter when stopped by an RP Tech.
One inspector (N.D.) entered Containment on RWP # 726 which
concerns low level drum shipments in the crane bay. Assuming he
ment RWA # 526 - an extended RWP for tours and inspections of

(X) Additional Pages Reported By: [Signature]

(9) Corrective Action Taken: Initiated JO No. _____
The R.P. Tech who found the inspectors inside the Steam Generator
led those inside out and escorted all three out of the Containment
BY: [Signature]

(10) Off - Site Notification: Made By: NA (Complete Telephone Records & Attach)
() AEPSC () I & M () NRC () Michigan (X) Not Applicable

(11) Investigation Assigned To: R.E. Masse (12) QA Findings: C/R #1: 80-137, 80-185, 80-177,
30-152, 79-373

(13) Investigation Report
() Additional Pages Completed By: _____

(14) Preventive Action Taken
() Additional Pages Dept. Head Approval: _____

(15) PNSRC Review: Date _____ Meeting No. _____ PNSRC Secretary _____
Comments: _____

(16) QA Classification: S-13

(17) Distribution: Plant Mgr., [Signature] Plant Mgr., QA Supv., PNSRC Secretary, AEPSC Mgr., QA, Department Head Originating Department - EAS



Item 8 Continued

the Instrument Room, Lower Containment, and Auxiliary that RWP is not valid for entry into a Steam Generator. (N.D. is not on any RWP which permits entry to #12 Steam Generator). N.D. was found inside the S.G. by an R.P. Technician.

Two other inspectors from the NRC (J.S. and W.K.) entered Containment on RWP 728 - QA and QC inspections of work in progress - which specifies that all conditions required by the RWP covering the work in progress must be adhered to. ~~However, both individuals are also on RWP 930 - Entry and Inspection of Steam Generator 12.~~

RWP 930 requires notification of the R.P. Section prior to entry of the Steam Generator so the necessary R.P. coverage can be given. It also requires wearing a O-1 R self-reading dosimeter for entry and the availability of a dose-rate instrument. No notification of intent to enter the Steam Generator was given to any R.P. supervisory person or R.P. Technician (the presence of the inspectors at the Steam Generator was discovered by a roving R.P. Technician in the Containment nor were any inspectors wearing O-1 R self-reading dosimeters although two (N.D. and W.K.) were found inside the Steam Generator.

Exposure rates inside the Steam Generator range from 40 or 50 μ R/hr above the swirl canes to 1.0 R/hr at the feed water ring level and beside swirl cane housings, etc.



The NRC Inspectors involved are:

N.D. — Neil E. DuBry (Currently limited by the NRC to 0.125 Rem per quarter maximum exposure)

J.S. — Jerome F. Schapter (Currently approved for exposures up to 1.000 Rem per quarter)

W.K. — William J. Key (Currently approved for exposures up to 1.000 Rem per quarter)

The R.P. Technician involved is Stephen F. Lehrer, an employee of Numanco, Inc.



Radiation Work Permit

NO. 930

Farm No. 4438
I & M, (Rev. 2/77)

VALID FROM 6/19/80 1630 TO 6/27/80 2400

O M W T F R

LOCATION Unit One Lower Containment J.O.# _____

DESCRIPTION Inspect Upper Moisture Separator on S/G, thru upper manway.

DATE & TIME NEEDED 6/20/80 0900

JOB DURATION 2 days

INST. & SPECIAL DOSIMETRY

- TIMED EXPOSURE RANGE _____
- EXTREMITY OR _____
- EXTRA TLD SETPOINT _____
- SELF READER 0-1R
- ALARMING _____
- REMOTE _____
- AREA MONITOR _____
- OTHER DOSE RATE METER N/ML

RESPIRATORY PROTECTION REQ.

- NONE HALF FACE
- FULL FACE AIR PACK
- SUPPLIED AIR-PRESS. DEMAND
- SUPPLIED AIR-CONTIN. FLOW
- OTHER _____

NAME	*TLD NO.	EXPOS. LIMIT MREM	EXPOS. RCVD. MREM	MPC HRS.
John Jensen	07994		40	
Bill Lentz	14132		35	
Russel Jtte	01030		50	
R Jones	2059	DO NOT EXCEED AUTHORIZED LIMITS		
WAG BROWN	2052			
(KEY)	7953			
SCHAFFNER	0007			

CONTAMINATION CONTROL

- NONE TENT
- GLOVE BOX RAGS
- POLY BAGS POLY TUBING
- OTHER _____

ADDITIONAL NAMES ON THP RAD. 406-2 ATTACHED

RADIATION CONDITIONS/MONITORING REQUIREMENTS

AREA	1. <u>UPPER S/G</u>	2. <u>LOWER S/G</u>	A-BEGINNING & END
B	10-100 mR/hr	TO BE	
C	TO BE DETERMINED		
AIR			

- SEMI CONTINUOUS R.P. COVERAGE REQUIRED
- NOTIFY R.P. PRIOR TO START
- PLANT MANAGER APPROVAL REQUIRED

NO. ANTI-C's REQUIRED

	CAP	HOOD	LAB COAT	INNER COVERALL	OUTER COVERALL	LINER	INNER GLOVE	OUTER GLOVE	INNER SHOE COVER	OUTER SHOE COVER	BOOT COVER	BOOTE	RUBBERS	DUCK	FEET
CLOTH	X				X	X									
PAPER									X						
Plastic/Rubber								2PR		X				2PR	
TAPED								X		X					

Plant Manager Sign. _____

A NUMBER INDICATES REQUIREMENT ONLY IN THAT AREA

SPECIAL INSTRUCTIONS (1) CLEAN PREP MUST BE SET UP ON GRATING PRIOR TO START. (2) FEET TAKE OFF DUCK FEET AND OUTER GLOVES PRIOR TO ENTERING CLEAN AREA AND PUT ON CLEAN PAIR (3) PUT ON CLEAN PAPER COVERALLS PRIOR TO ENTERING S/G.

REJECTED _____ SUPERVISOR [Signature] JOB FINISHED _____
 ISSUED _____ SOE [Signature] CANCELLED _____
 R. P. APPROV. _____ COMPLETED [Signature]

Radiation Work Permit

NO. 120

Form No. 4438

VALID FROM 6-2-80 0630 TO 6-30-80 2400

I & M (Rev. 2/77)

LOCATION LOWER UNIT #1 CONTAINMENT J.O.# _____

JOB DESCRIPTION CONDUCT QA & QC INSPECTIONS AS REQUIRED FOR CONTRACTORS & MAINTENANCE

DATE & TIME NEEDED 6/180 1200 HRS

JOB DURATION 30 Days

INST. & SPECIAL DOSIMETRY

- TIMED EXPOSURE RANGE _____
- EXTREMITY OR _____
- EXTRA TLD SETPOINT _____
- SELF READER _____
- ALARMING _____
- REMOTE _____
- AREA MONITOR _____
- OTHER AS REQ.

NAME	*TLD NO.	EXPOS. LIMIT MREM	EXPOS. RCVD. MREM	MPC HRS.
<u>MORSE, E. A.</u>	<u>1006</u>	<u>300</u>	<u>10</u>	
<u>KERNOSKY, RE</u>	<u>1157</u>		<u>10</u>	
<u>OTTE, RL</u>	<u>1030</u>		<u>45, 45</u>	
<u>WIDERWAX, MR</u>	<u>1128</u>		<u>10, 15</u>	
<u>LICKCOX, D</u>	<u>1007</u>			
<u>RUTZ, D.</u>	<u>1168</u>		<u>44, 46</u>	
<u>FREER, E</u>	<u>1147</u>		<u>27, 18, 29</u>	
<u>ROOD, R.</u>	<u>1029</u>		<u>44</u>	
<u>WHIPPLE, J.</u>	<u>1184</u>	<input checked="" type="checkbox"/>	<u>10, 10</u>	

- ### RESPIRATORY PROTECTION REQ.
- NONE HALF FACE
 - FULL FACE AIR PACK
 - SUPPLIED AIR-PRESS. DEMAND
 - SUPPLIED AIR-CONT'N FLOW
 - OTHER AS REQ.

ADDITIONAL NAMES ON THE RAD. 406-2 ATTACHED RADIATION CONDITIONS/MONITORING REQUIREMENTS

- ### CONTAMINATION CONTROL
- NONE TENT
 - GLOVE BOX RAGS
 - POLY BAGS POLY TUBING
 - OTHER AS REQ.

AREA 1. REFER TO APPLICABLE RWP

AREA	A-BEGINNING & END	B-PERIOD	C-CONTIN.	D-
<u>B-7</u>				
<u>C-1</u>				
<u>AIR</u>				

- CONTINUOUS R.P. COVERAGE REQUIRED
- NOTIFY R.P. PRIOR TO START
- PLANT MANAGER APPROVAL REQUIRED

NO. ANTI-C'S REQUIRED

CAP.	HOOD	LAB COAT	INNER COVERALL	OUTER COVERALL	LINER	INNER GLOVE	OUTER GLOVE	INNER SHOE COVER	OUTER SHOE COVER	BOOT COVER	BOOTS	RUBBERS
CLOTH												
PAPER												
Plastic/Rubber												
TAPED												

Plant Manager Sign. _____

A NUMBER INDICATES REQUIREMENT ONLY IN THAT AREA

SPECIAL INSTRUCTIONS (*) FOR CLOTHING REQUIREMENTS REFER TO RWP THAT APPLIES TO JOB BEING WORKED ON, AND ANY SPECIAL REQUIREMENTS.

ISSUED P. Kernosky SUPERVISOR P. Kernosky JOB FINISHED _____
 ISSUED D.L. GALLAGHER SOE JWS CANCELLED _____
 R. P. APPROV. _____ COMPLETED _____

*Supplied by requestor
 THP RAD. 406-1 REV. 1

WHITE-R.P.-ACCESS CONTROL
 YELLOW-R.P.-JOB SITE
 PINK-BOX OFFICE



*Name	*TLD No.	Expos. Limit Mrem.	Expos. Rcvd. Mrem.	MPC Hrs.
STIETZEL, J.	1001	200		
BOLINGER, H.	1031	↓		
GRIFFIN, G.	1174			
RITA, F.	1175		22	
BIELMAN, T.	4116	↓		
REIMEN	7838			
BOUDREAU	7780		25	
VALADEZ	7853		67,91,58	
RICKMAN	7855		77,180,20	
ANDERSON	7856			
OUZELLETT	7857		93,113,46	
MILLER	7860		90	
STEINHAUSER	7859		138,88,57	
KOZUBLEV	7421			
YOUNG	7841		11	
KEY	7453			
VAHLESE	7974		38	
GLADSON	5490		6	
SCARAMELLINO	0023			
KEY	7953			
SCAPNER	0007			
MADDOX	4915		28	
REYNOL	4920		10,15	

*REQUESTED R. Karnosky SUPERVISOR R. Karnosky CANCELLED _____
 *APPROVED D.L. GALLAGHER SOE _____ COMPLETED _____
 *P. APPROV. [Signature]

EXTENDED

Radiation Work Permit

NO. 526

Form No. 4438

VALID FROM 4-1-80 0000 TO 6-30-80 2400

& M (Rev. 2/77)

LOCATION Unit 12TH East Rm, Lower Cont. & Annulus

J.O.#

DESCRIPTION Tours & Inspection

DATE & TIME NEEDED N/A

INST. & SPECIAL DOSIMETRY

JOB DURATION N/A

- TIMED EXPOSURE RANGE _____
- EXTREMITY OR _____
- EXTRA TLD SETPOINT _____
- SELF READER _____
- ALARMING _____
- REMOTE _____
- AREA MONITOR _____
- OTHER Dose Rate Meter

NAME	TLD NO.	EXPOS. LIMIT MREM	EXPOS. RCVD. MREM	MPC HRS.
<u>As Assigned</u>		<u>50/day</u>		
<u>Rita</u>	<u>1175</u>		<u>14</u>	
<u>Brown</u>	<u>2052</u>		<u>85, 10, 20</u>	
<u>Wes</u>	<u>2059</u>		<u>135, 15</u>	
<u>McCullough</u>	<u>3079</u>		<u>51</u>	
<u>Struble</u>	<u>13085</u>		<u>10</u>	
<u>DiLore</u>	<u>13091</u>		<u>91</u>	
<u>Kamrad</u>	<u>13104</u>		<u>42</u>	
<u>Niland</u>	<u>13106</u>		<u>15</u>	

- ### RESPIRATORY PROTECTION REQ.
- NONE HALF FACE
 - FULL FACE AIR PACK
 - SUPPLIED AIR-PRESS. DEMAND
 - SUPPLIED AIR-CONTIN. FLOW
 - OTHER See Special Inst.

ADDITIONAL NAMES ON THE RAD. 406-2 ATTACHED RADIATION CONDITIONS/MONITORING REQUIREMENTS

- ### CONTAMINATION CONTROL
- NONE TENT
 - GLOVE BOX RAGS
 - POLY BAGS POLY TUBING
 - OTHER _____

AREA	1.	2.
<u>B</u>	<u>See Page</u>	
<u>CONTAM.</u>	<u>Top Board</u>	
<u>AIR</u>		

- A-BEGINNING & END
- B-PERIOD-
- C-CONTIN.
- D-

- CONTINUOUS R.P. COVERAGE REQUIRED
- NO. ANTI-C's REQUIRED
- NOTIFY R.P. PRIOR TO START
- PLANT MANAGER APPROVAL REQUIRED

	CAP	HOOD	LAB COAT	INNER COVERALL	OUTER COVERALL	LINER	INNER GLOVE	OUTER GLOVE	INNER GLOVE	SHOE COVER	OUTER SHOE COVER	BOOT COVER	BOOTS	RUBBERS	Duck Feet
<u>CLOTH</u>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
<u>PAPER</u>										<input checked="" type="checkbox"/>					
<u>Plastic/Rubber</u>									<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<u>TAPED</u>									<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				

Plant Manager Sign. _____

A NUMBER INDICATES REQUIREMENT ONLY IN THAT AREA

SPECIAL INSTRUCTIONS (1) Assure Apdus is tagged out each time prior to entry
(2) Check with R.P. each day prior to entry for respiratory protection requirements
(3) Notify R.P. of any problems

~~(4) ...~~ 1. A. Valid FOR IN-102 THE CRIME LAB. IF RX IS CRITICAL

ISSUED A. Kanger SUPERVISOR D. Schneider JOB FINISHED _____
 ISSUED A. Kanger SOE J. S. CANCELLED _____
 R. P. APPROV. D. Schneider COMPLETED _____



NAME	TLD NO.	EXPOS. LIMIT	EXPOS. RCVD.
O'Neil	3115		23
Tilly	3117		42
Nichols	3171		136, 12, 30, 20
Caperton	3192		43
Murray	3199		35
McClary	4072		28, 34
Winger	4084		10
Berkman	4158		10
Ouvianka	4166		15
Doubleday	4173		30, 20
Harrison	4175		18
Thurman	5353		23, 11
Koenig	5396		25
Mookuy	6586		12
Colwell	7721		15
O'Connor	7817		10
Berman	7838		30
Wickel	9001		10
Ashman	4041		20
Madole	4111		29
McCullen	4172		10
Utama	5493		12



Radiation Work Permit

NO. 126

Form No. 4438

VALID FROM 6-2-80 0600 TO 6-30-80 2400

M PM I W R

I & M (Rev. 2/77)

LOCATION 609 E. Cux Crumley & Concrete Mix. Rm. I.O.# 3703

DESCRIPTION Low level ragtop / chertop load / ship

DATE & TIME NEEDED 0700 6-1-80

JOB DURATION 1 hr.

INST. & SPECIAL DOSIMETRY

- TIMED EXPOSURE RANGE _____
 - EXTREMITY OR _____
 - EXTRA TLD SETPOINT _____
 - SELF READER _____
 - ALARMING _____
 - REMOTE _____
 - AREA MONITOR _____
 - OTHER DOSE RATE METER
- RESPIRATORY PROTECTION REQ.
- NONE HALF FACE
 - FULL FACE AIR PACK
 - SUPPLIED AIR-PRESS. DEMAND
 - SUPPLIED AIR-CONTIN. FLOW
 - OTHER _____

NAME	TLD NO.	EXPOS. LIMIT MREM	EXPOS. RCVD. MREM	MPC HRS.
Bill Scott	4136	100		
Sandy Dammholt	4154	100		
AND ADDITIONAL MARSH	1006		10	

ADDITIONAL NAMES ON THP RAD. 408-2 ATTACHED
RADIATION CONDITIONS/MONITORING REQUIREMENTS

AREA	1 CRANE BAY	2 DRUM. RM.	A-BEGINNING & END
CON	B 1-5 m ² /HR	B 5-10 m ² /HR	B-PERIOD
AIR	B < 50 DPM	B 20K-50K DPM	C-CONTIN.
			D-

CONTAMINATION CONTROL

- NONE TENT
- GLOVE BOX RAGS
- POLY BAGS POLY TUBING
- OTHER _____

- Yes No CONTINUOUS R.P. COVERAGE REQUIRED
- NOTIFY R.P. PRIOR TO START
- PLANT MANAGER APPROVAL REQUIRED

	CAP	HOOD	LAB COAT	INNER COVERALL	OUTER COVERALL	LINER	INNER GLOVE	OUTER GLOVE	INNER SHOE COVER	OUTER SHOE COVER	BOOT COVER	BOOTS	RUBBERS	TENT
CLOTH	1/2		1		2	1/2								
PAPER									1/2					
Plastic/Rubber								2		2				2
TAPED								2		2				

NO. ANTI-C's REQUIRED

Plant Manager Sign. _____

A NUMBER INDICATES REQUIREMENT ONLY IN THAT AREA

SPECIAL INSTRUCTIONS AND CONCRETE MIXING ROOM DOSE RATE METER REQ. FOR DRUM. RM. IF POSTED

AS HIGH RAD. AREA. CLOTHING REQ. FOR CRANE BAY IS LISTED AS 1'S. CLOTHING REQ. FOR DRUM. RM. IS LISTED AS 2'S. NOTIFY RP PRIOR TO LOADING ANY DRUMS.

ECUTED W. Scott SUPERVISOR W. Scott JOB FINISHED _____
 ISSUED D.L. GALLAGHER SOE James Dubson CANCELLED _____
 R. P. APPROV. [Signature] COMPLETED _____

Supplied by requester
THP RAD. 408-1 REV. 1

WHITE-R.P.-ACCESS CONTROL
 YELLOW-R.P.-JOB SITE
 PINK-SOE OFFICE



Date 6-25-50
 Time of Survey 1630
 Time of Analysis 1630
 Instrument R02 #1000
 Background _____
 Efficiency _____
 Technician _____
 REMARKS: _____

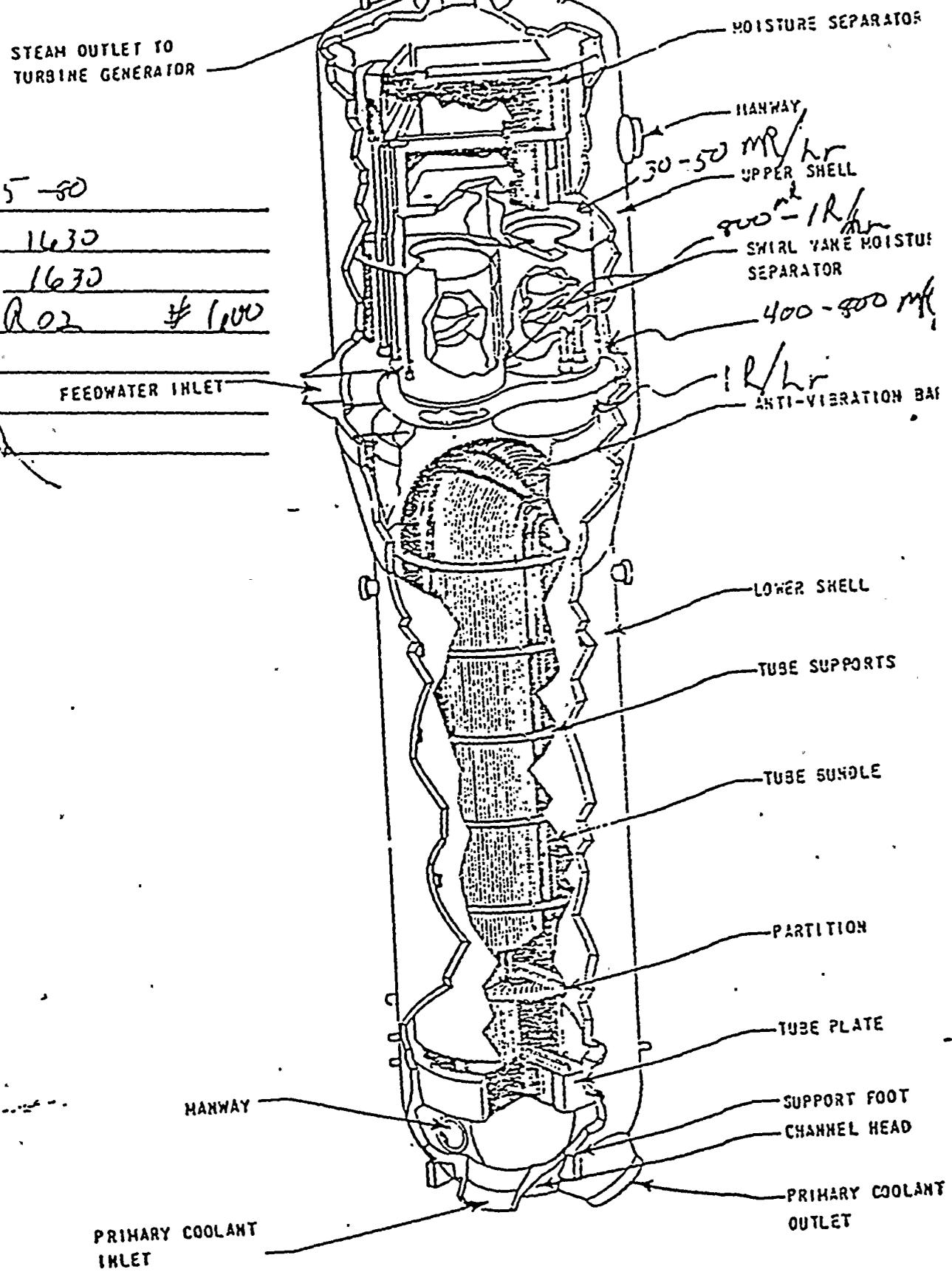


FIGURE NS-2-21

STEAM GENERATOR

CONDITION REPORT

(1) C/R NO. 2-5-80-152

TO: PLANT MANAGER

(2) DATE: 5-9-80 TIME: 1005

(3) Category A B C D (E) F

Classified By: [Signature]

(5) LER/AEO NO.: _____

LER DUE BY: _____

(6) Item Reported On PERSONNEL ENTRY INTO U-2 L.C. ANNULUS WITHOUT A VALID RWP. (7) Plant Conditions:
Unit No. 1 Mode 1 Power Level 100 %
Unit No. 2 Mode 1 Power Level 100 %

(8) Description of Condition/Event Date 5-8-80 Event Time 0835 Unit Affected 2

(3) I/M MAINTENANCE PERSONNEL ENTERED U-2 L.C. ANNULUS TO FINISH UP A JOB WITHOUT A VALID RWP. THE RWP # 629 WRITTEN FOR THE JOB HAD EXPIRED ON 5-7-80 @ 2400 AND HAD BEEN PULLED AND CANCELED WHEN THE ENTRY WAS MADE ON 5-8-80

Additional Pages

Reported By: [Signature]

Corrective Action Taken:

Initiated JO No. _____

INFORMED RADIATION PROTECTION SUPERVISOR

BY: [Signature]

(10) Off - Site Notification: Made By: N.A. (Complete Telephone Records & Attach)

AEPS I & M NRC Michigan Not Applicable

(11) Investigation Assigned To: R.L. DIDDING (12) QA Findings: C/R R-6: 79-345, 79-322, 79-177

(13) Investigation Report

Additional Pages

Completed By: _____

(14) Preventive Action Taken

Additional Pages

Dept. Head Approval: _____

PNSRC Review: Date _____ Meeting No. _____ PNSRC Secretary _____

Comments: _____ Exhibit II - 1 of 2

(16) QA Classification: S-13

(17) Distribution: Plant Mgr., [Signature] Plant Mgr., QA Supv., PNSRC Secretary, AEPS Mgr.-QA, Department Head Originating Department - EAS

DAILY WORKSHEET

SHEET NO. 1

RWP# 629*

DATE 5/8/80

DAY # 129

SAMPLE ID 2025

EFFECTIVE FRACTION OF MPC_A .0005168

LOCATION: U-2 L.C. ANALYSIS

MPC HOURS
PAST 5 DAYS

TLD# 2001 LAST NAME CIARAVINE

Time In

0835

Time Out

0854

Exp. Time

.316

MPC Hours

.00016331

MPC Hrs.

Remarks/Rt

.00016331

MSA
AIR
PACK

TLD# 2045 LAST NAME HENDRICKS

MPC HOURS
PAST 5 DAYS

Time In

0835

Time Out

0854

Exp. Time

.316

MPC Hours

.00016331

.00016331

MSA
AIR
PACK

TLD# 2131 LAST NAME Hewley

MPC HOURS
PAST 5 DAYS

Time In

0835

Time Out

0854

Exp. Time

.316

MPC Hours

.00016331

.00016331

MSA
AIR
PACK

TLD# _____ LAST NAME _____

MPC HOURS
PAST 5 DAYS

Time In

Time Out

Exp. Time

MPC Hours

TLD# _____ LAST NAME _____

MPC HOURS
PAST 5 DAYS

Time In

Time Out

Exp. Time

MPC Hours



TO: PLANT MANAGER

(2) DATE: 6/26/80 TIME: _____

(3) Category A B C D E F

Classified By: [Signature]

(5) LER/AEO NO.: _____

LER DUE BY: _____

(6) Item Reported On MAN WORKING IN POSTED AREA (RADIATION & CONTAMINATION) WITHOUT RADIATION WORK PERMIT AND PROPER ANTICONTAMINATION CLOTHING.

(7) Plant Conditions:
Unit No. 1 Mode 6 Power Level φ %
Unit No. 2 Mode 1 Power Level 100 %

(8) Description of Condition/Event Date 6-24-80 Event Time 1715 Unit Affected 1

INDIVIDUAL OF INTEREST IS A Q.A. INSPECTOR WHO AT THE TIME OF THE EVENT WAS TOURING UNIT 1 591' PIPE TUNNEL PICKING UP USED WELDING ROD AND OTHER MISCL. ITEMS. HE WAS TOTALLY UNAWARE OF THE REQUIREMENTS FOR THAT AREA, CONSEQUENTLY CONTAMINATED HIMSELF AND MOST PERSONAL BELONGINGS BECAUSE HE WASN'T WEARING ANY PROTECTIVE CLOTHING.

() Additional Pages

Reported By: LYNN HARDER

(9) Corrective Action Taken:

Initiated JO No. _____

CONTAMINATED INDIVIDUAL AND BELONGINGS AND ADVISED HIM OF PROPER PROCEDURE.

BY: LYNN HARDER

(10) Off - Site Notification: Made By: N.A. (Complete Telephone Records & Attach)

() AEPSC () I & M () NRC () Michigan ²⁴⁵ (x) Not Applicable

(11) Investigation Assigned To: J.E. STETZEL

(12) QA Findings: CLR file: 30-152, 79-345

(13) Investigation Report

() Additional Pages

Completed By: _____

(14) Preventive Action Taken

() Additional Pages

Dept. Head Approval: _____

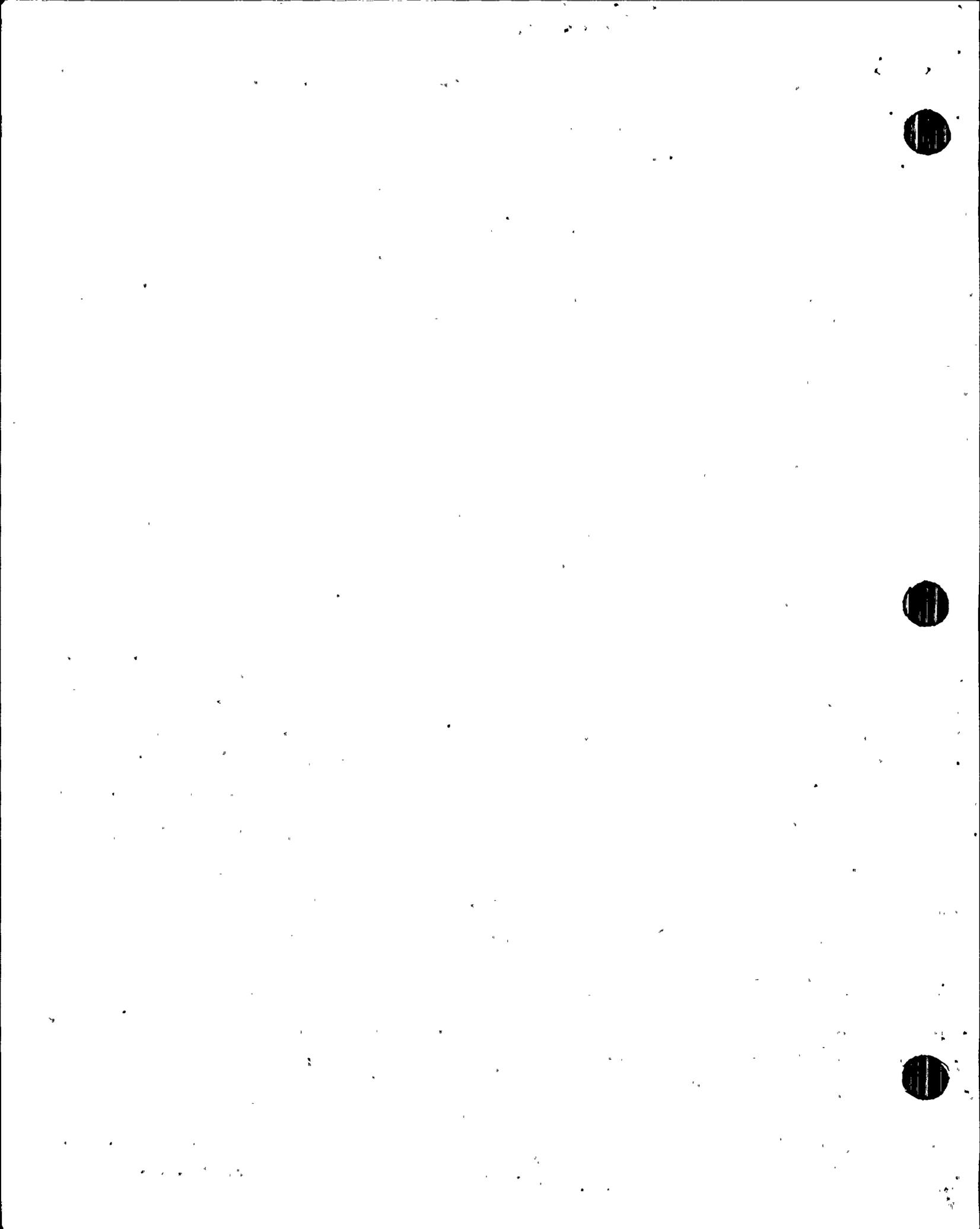
PNSRC Review: Date _____ Meeting No. _____ PNSRC Secretary _____

Comments: _____

(16) QA Classification: S-13

(17) Distribution: Plant Mgr., [Signature] Plant Mgr., QA Supv., PNSRC Secretary, AEPSC Mgr., QA, Department Head Originating Department - EAS

Exhibit III



Radiation Work Permit

NO. 120 (120)

Form No. 4438
I & M (Rev. 2/77)

VALID FROM 6-2-80 0630 TO 6-30-80 2400

LOCATION LOWER UNIT #1 CONTAINMENT I.O.# _____

JOB DESCRIPTION Support QA & PE inspections AS Required For Contractors & Maintenance

DATE & TIME NEEDED 6/1/80 1200 HRS

JOB DURATION 30 Days

NAME	*TLD NO.	EXPOS. LIMIT MREM	EXPOS. RCVD. MREM	MPC HRS.
Morse, E.A.	1006	300	10	
KERNOSKY, RE	1157		10	
OTTE, R.L.	1030		45, 45	
WIDERWAX, MR	1128		10, 15	
HICKCOX, D	1007			
RUTH, D.	1168		44, 46	
FREER, E	1147		27, 18, 29	
ROOP, R.	1029		44	
WHIPPLE, J.	1184	✓	10, 10	

- INST. & SPECIAL DOSIMETRY**
- TIMED EXPOSURE RANGE _____
 - EXTREMITY OR _____
 - EXTRA TLD SETPOINT _____
 - SELF READER _____
 - ALARMING _____
 - REMOTE _____
 - AREA MONITOR _____
 - OTHER AS REQ.

- RESPIRATORY PROTECTION REQ.**
- NONE HALF FACE
 - FULL FACE AIR PACK
 - SUPPLIED AIR-PRESS. DEMAND
 - SUPPLIED AIR-CONT'N FLOW
 - OTHER AS REQ.

- CONTAMINATION CONTROL**
- NONE TENT
 - GLOVE BOX RAGS
 - POLY BAGS POLY TUBING
 - OTHER AS REQ.

ADDITIONAL NAMES ON THP RAD. 406-2 ATTACHED _____

RADIATION CONDITIONS/MONITORING REQUIREMENTS

AREA 1. REFER TO APPLICABLE RWP

AREA	A-BEGINNING & END	B-PERIOD	C-CONTIN.	D-
B-γ				
CO				

- Yes No
- CONTINUOUS R.P. COVERAGE REQUIRED
 - NOTIFY R.P. PRIOR TO START
 - PLANT MANAGER APPROVAL REQUIRED
- Plant Manager Sign. _____

* NO. ANTI-C's REQUIRED

	CAP	HOCD	LAB COAT	INNER COVERALL	OUTER COVERALL	LINER	INNER GLOVE	OUTER GLOVE	INNER SHOE COVER	OUTER SHOE COVER	BOOT COVER	BOOTS	RUBBERS
CLOTH													
PAPER													
Plastic/Rubber													
TAPED													

A NUMBER INDICATES REQUIREMENT ONLY IN THAT AREA

SPECIAL INSTRUCTIONS (*) FOR CLOTHING REQUIREMENTS REFER TO RWP THAT APPLIES TO JOB BEING WORKED ON, AND ANY SPECIAL REQUIREMENTS.

REQUESTED P. KERNOSKY SUPERVISOR P. Kernosky JOB FINISHED _____

ISSUED D.L. GALLAGHER SOE Jad CANCELLED _____

R. P. APPROV. [Signature] COMPLETED _____

*Name	*TLD No.	Expos. Limit Mrem.	Expos. Rcvd. Mrem.	MPC Hrs.
Tietzel, J.	1001	200		
Bolingary, H.	1031	↓		
GRIFFIN, G.	1174			
RETA, F.	1175		22	
BIELMAN, T.	4116			
REIMAN	7838			
BOUDREAU	7780		25	
VALADEZ	7853		67,91,58	
RICKMAN	7855		77,180,120	
ANDERSON	7856			
DOUELLETTE	7857		93,113,46	
MILLER	7860		80	
STEINHAUSER	7859		138,88,57	
KOZIOLEK	7421			
YOUNG	7441		11	
KEY	7453			
V. G. Hesse	7974		38	
Guldsen	5490		16	
SCARAMELLA	0023			
KEY	7953			
SCHAPHER	0009			
MADDOX	4915		28	
Byrd	4920		10,15	

*REQUESTED R. Karnosky SUPERVISOR R. Karnosky CANCELLED _____
 ISSUED D.L. GALLAGHER SOE _____ COMPLETED _____
 APPROV. Paul Kelly



Radiation Work Permit

NO. 930

Form No. 4438
I & M, (Rev. 2/77)

VALID FROM 6/19/80 1630 TO 6/27/80 2400

O M SM I W R

*LOCATION Unit One Lower Containment J.O.# _____

*DESCRIPTION Inspect Upper Moisture Separator on S/G, thru upper manway.

*DATE & TIME NEEDED 6/20/80 0700

*JOB DURATION 2 days

INST. & SPECIAL DOSIMETRY

- TIMED EXPOSURE RANGE _____
- EXTREMITY OR _____
- EXTRA TLD SETPOINT _____
- SELF READER 0-1R
- ALARMING _____
- REMOTE _____
- AREA MONITOR _____
- OTHER DOSE RATE METER AVAIL. _____

RESPIRATORY PROTECTION REQ.

- NONE HALF FACE
- FULL FACE AIR PACK
- SUPPLIED AIR-PRESS. DEMAND
- SUPPLIED AIR-CONTIN. FLOW
- OTHER _____

NAME	TLD NO.	EXPOS. LIMIT MREM	EXPOS. RCVD. MREM	MPC HRS.
John Hansen	07994		40	
Bill Lentz	14132		35	
Russel Jtte	01030		50	
P Jones	2059			
W BROWN	0052			
KEY	7953			
SCHAIWER	0007			

DO NOT EXCEED AUTHORIZED LIMITS

ADDITIONAL NAMES ON THP RAD. 406-2 ATTACHED

RADIATION CONDITIONS/MONITORING REQUIREMENTS

AREA	1. <u>UPPER S/G</u>	2. <u>LOWER S/G</u>	A-BEGINNING & END
B-2	B 10-100 mR/hr	B TO BE	
d	R <50 CPM	B DETERMINED	
AIR			

CONTAMINATION CONTROL

- NONE TENT
- GLOVE BOX RAGS
- POLY BAGS POLY TUBING
- OTHER _____

- SEMI CONTINUOUS R.P. COVERAGE REQUIRED
 - NOTIFY R.P. PRIOR TO START
 - PLANT MANAGER APPROVAL REQUIRED
- Plant Manager Sign. _____

NO. ANTI-C's REQUIRED

	CAP	HOOD	LAB COAT	INNER COVERALL	OUTER COVERALL	LINER	INNER GLOVE	OUTER GLOVE	INNER SHOE CG-YER	OUTER SHOE COVER	BOOT COVER	BOOTE	RUBBERS	DUCK	LEFT
CLOTH	X				X	X									
PAPER									X						
Plastic/Rubber								2PR		X				2PR	
TAPED								X		X					

A NUMBER INDICATES REQUIREMENT ONLY IN THAT AREA

SPECIAL INSTRUCTIONS (1) CLEAN PREP MUST BE SET UP ON GRATING PRIOR TO START. (2) FEET TAKE OFF DUCK FEET AND OUTER GLOVES PRIOR TO ENTERING CLEAN AREA AND PUT ON CLEAN PAIR (3) PUT ON CLEAN PAPER COVERALLS PRIOR TO ENTERING S/G.

REVISIONS _____ SUPERVISOR [Signature] JOB FINISHED _____
 ISSUED _____ SOE [Signature] CANCELLED _____
 R. P. APPROV. _____ COMPLETED [Signature]



0 C.A.A.

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6-27-20 picked up TLD from IWI RP and
asked what kind of article and any policies
about my, he said I could call SG. Then,
picking up #2 SG, at that time at that office
did remember why (somehow, part of weekend
and what situation I was in to remember why)
SGs were told to write IWI RP down in writing
in that week,

longest extent of information being done in
the week,

6-28-20 IWI RP in context of a 1 page memo on 6/28/20
at that time of our early activity in that time period
concerning,

6-29-20 Provided to Federick since we #2 SG and observed
myself and presenting memo.

6-30-20 Found access to #2 SG, contacted, did not return. Moved
to #3 SG, denied access, paper about Co. & Bickley made
entry into SG and distributed to entry.



... actually (1/2) into #300...
... and ...
... (56)

...
...

... was not ...
... RP's Security ...

...
... training.

...
...

...
... RP's ...

...
...
... training of clearance ...



ELC

DATE: JULY 29, 1980

SUBJECT: TINYGRAM OPERATIONS MEMO 80-82

From: RS LEASE

To: SHIFT OPERATING ENGINEERS

A WEEK AGO WE PROVIDED A GUIDE TO TAKE SOME VISITORS INTO UNIT CONTAINMENT. THE VISITORS DID NOT GET PROPERLY BLENDED IN WITH RADIATION PROTECTION FOR WHICH WE RECEIVED A CONDITION REPORT. CONTACT HAD BEEN MADE WITH R/P BUT TOTAL COMMUNICATION DID NOT TAKE PLACE. THE COMMUNICATION PROBLEM WAS SOMEWHAT WEAK IN BOTH SENDING AND RECEIVING.

TO ELIMINATE THIS PROBLEM IN THE FUTURE I HAVE MADE A ONE PAGE INSTRUCTION SHEET OF THE STEPS REQUIRE TO GUIDE A PERSON IN A CONTROLLED AREA. THESE ARE ONE PAGE AND CAN BE DISCARDED AFTER USE. A SUPPLY HAS BEEN SENT TO YOUR OFFICE.

#14 RCP IS NOW GOING BACK TOGETHER. WHEN KEN MILLER HAS THE PUMP SHAFT PULLED UP WITH TWO BOLTS HE IS TO LET YOU KNOW AND FILL AND VENT CAN START AGAIN. HE CAN FINISH BOLTING THE COUPLING WHILE FILLING AND BEFORE PUMP BUMP WILL BE REQUIRED.

TINY

Movement Chronology:

Local Time:

Event:

June 25, 1980
2:00-3:00 p.m.

NRC employees state they were in RP Office to obtain Schapker's TLD, but could not. DuBry stated he asked RP technician for radiation readings inside the Unit 1 steam generator.

June 26, 1980

7:06 a.m.

DuBry enters D. C. Cook Plant.

7:31 a.m.

DuBry enters Control Room.

7:41 a.m.

Key and Schapker enter D. C. Cook Plant.

7:52 a.m.

DuBry leaves Control Room.

7:54 a.m.

DuBry enters Office Building.

8:06 a.m.

DuBry leaves Office Building.

8:40 a.m.

DuBry, Key and Schapker enter Office Building.

8:41 a.m.

DuBry, Key and Schapker leave Office Building.

Prior

DuBry and Schapker in TLD Room. Schapker receives TLD from Hoss.

to 9:00 a.m.

DuBry asks Hoss about radiation levels around and in Steam Generators. Key asks similar questions of radiation protection technician.

9:00 a.m.

DuBry, Key and Schapker at Access Control Point.

After 9:00 a.m.

Lehrer meets DuBry, Key, and Schapker at Unit 1 Step-Off Pad. Lehrer asks where they are going, and finds they are going to Steam Generators. Lehrer tells them they need paper coveralls, and is informed the RWP does not require paper coveralls. Lehrer goes to get paper coveralls. Lehrer returns; DuBry, Key and Schapker are awaiting Lehrer at Unit 1 Step-Off Pad. DuBry, Key and Schapker depart for Steam Generators. Lehrer is paged by DiChiara, and Lehrer is told to find DuBry, Key, and Schapker and to escort them out of containment. Lehrer goes to Steam Generators 1 and 4, before finding DuBry, Key, and Schapker at Steam Generator 2. Lehrer finds Schapker outside the generator, Key inside the generator, and DuBry in manway. Lehrer escorts them from containment.

9:42 a.m.

DuBry, Key, and Schapker punch-out at Access Control point time clock.

After 9:42 a.m.

DuBry, Key, and Schapker at RP Foreman's Office, and found not to have been wearing the High range Dosimetry. DuBry, Key and Schapker are wearing street clothes at this time.

10:08 a.m.

Key and Schapker enter Office Building.

10:16 a.m.

Key and Schapker exit Office Building.

10:34 a.m.

DuBry enters Office Building.

10:39 a.m.

DuBry exits Office Building.

10:51 a.m. Key enters door 313, entry turnstyle. (Note: this appears to be the point in time that Key obtains new security badge).

11:35 & 11:37 a.m. DuBry and Schapker exit D. C. Cook Plant.

11:37 a.m. Key enters Office Building.

12:03 p.m. Key exits Office Building.

12:39 p.m. DuBry and Schapker enter D. C. Cook Plant.

1:20 p.m. DuBry, Key, and Schapker enter Office Building.

1:44 p.m. DuBry, Key, and Schapker exit Office Building.

1:56 p.m. Key and Schapker depart the D. C. Cook Plant.

Prior to 2:00 p.m. Holland stated Key and Schapker were in RP office to have their names added to RWP-930.

2:53 p.m. DuBry enters Office Building.

3:21 p.m. DuBry leaves Office Building.

4:38 p.m. DuBry departs D. C. Cook Plant.

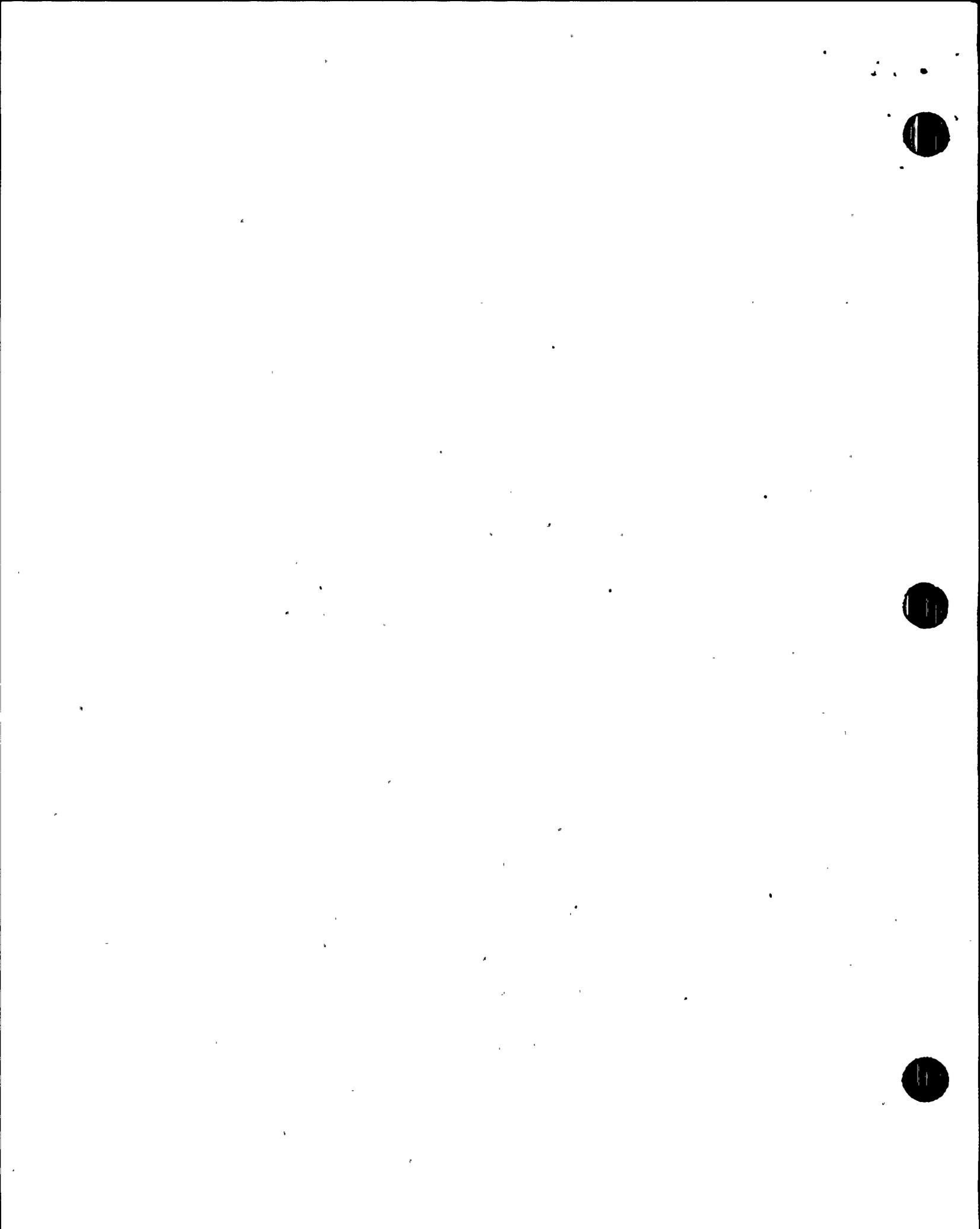
substituted for this tag if authorized by the Radiation Protection Section. Such signs or stickers shall have the radiation caution symbol and appropriate printing in magenta or purple on a yellow background.

F. RADIATION WORK PERMIT

The purpose of a Radiation Work Permit system is primarily to help control the exposure of plant personnel to radiological hazards. It does this in the following ways:

1. It controls access to hazardous or potentially hazardous areas.
2. It helps to restrict the spread of radioactive contamination.
3. It helps prevent the unexpected production of a radiological hazard.
4. It helps to assure that proper radiological precautions and procedures are followed at all times.

The use or non-use of a Radiation Work Permit does not change or modify the plant clearance permit system. The Radiation Work Permit is a supplement to this system whenever radiological cards are to be considered.



There are two types of Radiation Work Permits, Regular and Extended. A Regular Radiation Work Permit will be used for a specific job that is a non-routine job or an infrequently performed job, or a job that is of such a nature or done in such a location that radiological hazards may differ significantly from time to time. An Extended Radiation Work Permit shall only be authorized for a specific time period and a specific job or task which is of repetitive nature as long as the radiological conditions are not likely to change abruptly.

A Radiation Work Permit shall be required for any job which entails any of the following conditions:

1. Entry to the Reactor Containment is required.
2. Work is to be performed in any Posted Area.
3. Maintenance or inspection of equipment exceeding the following conditions:
 - a. Removable contamination in excess of 5000 dpm/100 cm² β - γ or 500 dpm/100 cm² α .
 - b. 100 mrem/hr at 3 feet
 - c. 1000 mrem/hr at 1 inch



4. Any work involving changes (withdrawing, uncovering opening, valving, disassembling, moving) that have a potential for causing significant, unexpected increases in radiation or contamination levels.
5. Handling of certain licensed radioactive materials.

In emergencies or in instances where quick action is required to protect personnel or equipment, the presence of experienced Radiation Protection personnel may be substituted for a Radiation Work Permit. Should no such individual be available, the presence of an individual authorized by the Radiation Protection Supervisor is permissible.

Any individual may request a Radiation Work Permit, should it appear to them that conditions do or will warrant it. Normally, the responsibility for initiating a Radiation Work Permit shall lie with the supervisor or foreman directly concerned with the work. Either the Shift Operating Engineer, the Operating Engineer, or Radiation Protection Section personnel may require that a Radiation Work Permit be obtained for the job, should it appear to them that conditions do or will warrant it.

Whenever a Radiation Work Permit is required for a job, the supervisor in charge of that job shall obtain a Radiation Work

Permit form and fill out in triplicate all of the necessary information including:

- Location of the job
- Work to be performed
- Duration expected
- Individuals involved
- Any special qualifications or situations involved

He shall then present the partially completed form to the Radiation Protection Section, where additional information will be added, such as:

- Surveys required and completed
- Results of preliminary surveys
- Exposure limits for personnel involved
- Necessary precautions, including protective clothing, special monitoring, etc.
- Special instructions

The Radiation Work Permit shall not be valid until it is signed by the supervisor or foreman of the work crew, the Radiation Protection Supervisor, or someone authorized by him, and the Shift Operating Engineer. Once all the signatures have been obtained, the

original shall be returned to the Radiation Protection Section, and the first copy shall be prominently posted at the entrance to the work area, and the second copy kept in the Shift Operating Engineer's office. The copies of the Radiation Work Permit posted at the work entrance and in the Shift Operating Engineer's office shall be left posted until the job is completed, or the time limitation has expired, at which time they shall be removed by Radiation Protection Personnel.

Any time entry is made into a Controlled Area to perform work covered by an RWP, the number of that RWP shall be entered under "Job" on the check-in, check-out card each time such an entry is made.

Once a Radiation Work Permit has been authorized, personnel shall not deviate from the conditions of the permit without the authorization of the Radiation Protection Supervisor, someone authorized by him, or the Shift Operating Engineer. However, any significant change in the radiological conditions in or around the work area shall immediately suspend the Radiation Work Permit and all personnel should leave the area until the Radiation Protection Section has been able to survey the area and make any changes in the Radiation Work Permit found to be necessary.

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6. PROTECTIVE CLOTHING

Any individual entering a Contaminated Area shall be required

