



Federal Emergency Management Agency

Washington, D.C. 20472

JUL 29 1981

MEMORANDUM FOR: Edward L. Jordan
Director, Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission

FROM: *Richard W. Krimm*
Richard W. Krimm
Assistant Associate Director
Office of Natural and Technological Hazards

SUBJECT: Post-Exercise Report for the Kewaunee Nuclear Power Plant
Offsite Radiological Emergency Preparedness Exercise Conducted
January 21, 1981

Attached is the post-exercise evaluation of the small-scale offsite radiological emergency preparedness exercise conducted on January 21, 1981, at the Kewaunee Nuclear Power Plant. The State of Wisconsin and the Counties of Kewaunee and Manitowoc participated in the exercise.

Although there were a number of deficiencies observed at the State and local levels, there is reasonable assurance, as demonstrated in this exercise, that both the State and local governments have an adequate capability to protect the public in the event of a radiological emergency at the Kewaunee Nuclear Power Plant.

It should be noted that there were a number of improvements demonstrated in the exercise at the State level since the Prairie Island exercise conducted in October 1980.

A response from the State of Wisconsin to the deficiencies noted during the exercise is attached.

Attachments
As Stated

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REGION V
Federal Center
Battle Creek, Michigan 49016

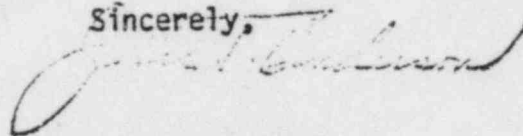
OCT 8 1981

Mr. Joseph LaFleur
Administrator
Wisconsin Division of
Emergency Government
4802 Sheboygan Avenue
Madison, Wisconsin 53702

Dear Mr. LaFleur:

The advance draft of the Post-Exercise Evaluation for Kewaunee-Point Beach nuclear power plants involving Manitowoc and Kewaunee counties' exercise of State and local off-site radiological emergency plans, sent you some time ago, is now the final evaluation.

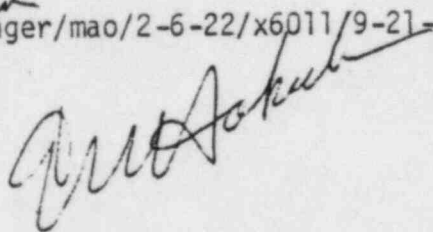
Sincerely,



John T. Anderson
Regional Director

cc: RD
AD/PP
FEMA Nat'l
Vandel
EMS-WI

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GWenger/mao/2-6-22/x6011/9-21-81/REF: REP-



Region V

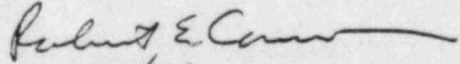
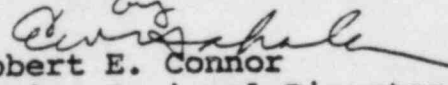
MAY 12 1981

Joseph LaFleur, Administrator
Wisconsin Division of
Emergency Government
4802 Sheboygan Avenue
Madison, Wisconsin 53702

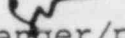
Dear Mr. LaFleur:

The Radiological Emergency Preparedness post-exercise evaluation for Kewaunee and Manitowoc Counties, site-specific to the Kewaunee Nuclear Power Plant, also shows the same capabilities in relation to the Point Beach Nuclear Plant. Our record copy will be changed accordingly.

Sincerely yours,



Robert E. Connor
Acting Regional Director

cc: All RAC Members
J. Dickey, FEMA Nat'l
G. Barber
J. Knorr, WI Elec. Power Co., 231 W. Michigan St.,
EMS-WI Milwaukee, WI 53201


GLWenger/pr/x6011/5-7-81/Ref:REP-WI

Region V

MAR 6 1981

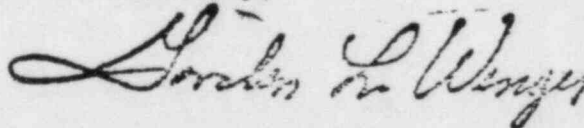
Joseph LaFleur, Administrator
Wisconsin Division of Emergency
Government
Hill Farms State Office Building
4802 Sheboygan Avenue
Madison, Wisconsin 53702

Dear Mr. LaFleur:

Forwarded herewith for your examination and use is an advance draft of the Post Exercise Evaluation for the Kewaunee, Manitowoc Counties Exercise of State/Local Radiological Emergency Plans conducted January 21, 1981.

Please be advised that this evaluation is still subject to examination and approval by the Regional Advisory Committee. Additional comments and recommendations may, therefore, still be forthcoming.

Sincerely,



Gordon L. Wenger
Chairman
Regional Advisory Committee

Enclosure

cc: EMS - WI

REP/GWenger/bb/x6011/3-3-81



STATE OF WISCONSIN

DIVISION OF EMERGENCY GOVERNMENT

Lee Sherman Dreyfus
Governor

4802 SHEBOYGAN AVENUE
MADISON, WISCONSIN 53702

(608) 266-3232

14 May 1981

Mr. Gordon Wenger, Chairman
Regional Advisory Committee
Region V, Federal Center
Battle Creek, Michigan 49016

Dear Mr. Wenger:

This letter, with attachments, is in response to your letter of March 6, 1981 enclosing the "advance draft of the Post Exercise Evaluation for the Kewaunee, Manitowoc Counties Exercise of State/Local Radiological Emergency Plans conducted January 21, 1981." We are aware that the evaluation is still subject to additional comment by the RAC.

Attachments include state and local responses to III-Exercise Scenario and IV-Evaluations, pages 8 through 30. Our responses reference the specific recommendations. However, in some instances we have addressed the paragraphs preceding the recommendations. We believe that the State of Wisconsin, Kewaunee and Manitowoc Counties have addressed all of the required recommendations to the extent possible.

Formal submission of the state plan and appropriate annexes was submitted on April 6, 1981 to the Regional Director in accordance with All State Letter, 19 February 1981, Subject: Formal Submission of Radiological Emergency Response Plans.

Sincerely,

Joseph L. LaFleur
Joseph L. LaFleur
Administrator

JLL:MSs

Attachments

cc Gary Gylund, EC Area Director
Roy Koss, Kewaunee Co. Director
Nancy Crowley, Manitowoc County Director

file

*action
REP*

STATE AND COUNTY RESPONSES

KEWAUNEE NUCLEAR POWER PLANT EXERCISE

21 January 1981

Recommendation 1, Page 9 - State Response

In addition to the simulated events at the nuclear power plant that initiate the exercise and result in state and local protective responses, future scenarios will include the objectives of the exercise, appropriate evaluation criteria and simulated events designed to involve all elements of the state and local organizations. The scenario will also describe expected response activities for each participating organization.

Recommendation 2, Page 11 - Kewaunee County Response

In the future Kewaunee County will demonstrate physical change of staff with pre-briefing.

Recommendation 2, Page 11 - Manitowoc County Response

Manitowoc County's Radiological Emergency Response Plan calls for a shift change. In future exercises, Manitowoc County will demonstrate capability to effect a shift change of all EOC personnel.

Recommendation 3, Page 11 - Kewaunee County Response

Due to the costs of drills, Kewaunee County will not participate again until there is financial support from some agency other than local government.

Recommendation 3, Page 11 - Manitowoc County Response

Manitowoc County has immediate plans to conduct a local critique with all personnel who were and would be involved in emergency exercises. Personnel will be apprised of their performance during the January 21, 1981 exercise and consulted for any recommendations on plan improvements. Necessary updating of the plan will be effected. Manitowoc County will conduct an exercise with a test incident originating at the Point Beach Nuclear Plant to assure all county personnel are aware of their responsibilities in the event of any emergency.

Paragraph 3, Page 13 - State Response

The State of Wisconsin does not currently have funding legislation as other states have in force which provides adequate funding for exercise capability and for specific recommendations and references as are made in this case. While there is agreement that this capability is necessary, it is currently not available. Until such time as specific legislation is passed or currently budgeted and appropriated funds could be made available for this purpose, we are unable to change the situation referenced.

Recommendation 4, Page 13 - State Response

Future exercise scenarios can provide for the over extension of state capabilities which will require asking for federal assistance. This will provide for an interface and require coordination of available resources and a request for federal assistance. At the time of the exercise the State of Wisconsin did not have information available from FEMA indicating the interface and available resources of the associated federal departments in such an exercise process. Although some information has now been printed in the Federal Register, there is still not a full understanding of actual capabilities available. It has always been Wisconsin's content that in order to have a full exercise, there needs to be full federal participation. However, there has been no explanation of what full federal participation means in terms of coordination of federal agencies and who is actually in charge of which portions. Specifically references of those agencies not providing coordination information are EPA, FEMA, NRC: these comments are made based on information provided by the Interorganizational Advisory Committee with input from FEMA and NRC at the recent Houston meeting.

Recommendation 5 & Paragraph 1, Page 15 - Manitowoc County Response

Manitowoc County disagrees with the comments indicating that key county officials were not alerted until 8:25 AM. All key personnel were notified by 7:30 AM, not 8:25 AM. Personnel were actually present in the County EOC by 7:30 AM and the EOC was officially opened at 8:13 AM by the Manitowoc County Board Chairman. We also note that the information communicated to Manitowoc County at 7:03 AM, indicating a test "Alert" status at the Kewaunee Nuclear Power Plant did not require opening the EOC as early as it was opened. Enclosed with this response is a copy of the log kept on January 1, 1981.

Recommendation 6, Page 15 - Kewaunee County Response

Kewaunee County is waiting for the State to indicate which form of warning will be used.

Recommendation 6, Page 15 - Manitowoc County Response

Manitowoc County is awaiting word from the State of Wisconsin on the results of their investigation with the nuclear power plants on the best system for alerting the public. Sirens within the EPZ are being considered with activation from the Manitowoc County Sheriff's Department or the County EOC.

Recommendation 7, Page 16

Does not apply to State or Counties.

Recommendation 8, Page 16 - Kewaunee County Response

When 911 is implemented, we will have radio contact from the county to the area. A Master Plan is being implemented for high band communications - county wide. We believe our present telephones in the EOC are adequate for emergencies. (414-487-2940 and extension 414-487-5203, 414-487-2163 and extension 414-487-3311, and hot line to Kewaunee County Sheriff.)

Recommendation 8, Page 16 - Manitowoc County Response

Manitowoc County already has state-to-county communications and will have county-to-county communications when Kewaunee County has established state-to-county radio communications.

Recommendation 9, Page 16 - Manitowoc County Response

Consolidation of the Sheriff Dispatch Communications System and the EOC has already been accomplished.

Recommendation 10, Page 16 - State Response

The State considers communications between the State and the radiological field teams to be adequate. Additional experience will be gained through subsequent exercises and drills. State will review communications capabilities including the possibility of portable transceivers on the Division of Emergency Government frequency for each RAD field team.

Paragraph 2, Page 17 - Kewaunee County Response

Kewaunee County PIO personnel were not given adequate instruction on how they were to operate within the JPIC. After information was received, we feel everything went smoothly.

Paragraph 5, Page 17 - State Response

The State acknowledges that adequate hardware and equipment are currently not available for full functioning of the JPIC.

Paragraph 6, Page 17 - State Response

The State concurs that there is a need for a full time Public Information Officer to provide sufficient support both during and post exercise and also on an ongoing basis in terms of total public information. The State further concurs that adequate clerical support was not available to assist the Public Information Officer at the JPIC. Further, a rumor control center does need to be developed and sufficient personnel should be assigned to cover the above tasks on a shift change basis. Currently this capability does not exist within the State Division of Emergency Government.

Paragraph 7, Page 17 - State Response

The State believes the press kit was adequate for this situation and was not meant to be a public relations device which may negatively affect the creditability of the State should such information be passed out during an actual emergency, and therefore, does not necessarily agree that more citizen education material should be published and presented to the public.

FEMA personnel at the oral critique indicated their high level of satisfaction with the "first" slide presentation for public information and media information at the JPIC. The commentary in the written critique is extremely subdued compared to the level of commentary previously presented. The State agrees that Manitowoc County should

receive praise for their efforts to translate emergency information to foreign languages as this was anticipated previous to the exercise in the planning process and the implementation efforts were outstanding on the day of the exercise.

Recommendation 11, Page 18 - State Response

The State will meet with the utility to explore closer working conditions for the PIO's within the JPIC. We will also discuss with the utility the requirements for additional telephones, typewriters and reproduction equipment, etc. Additional briefing displays and security will also be addressed.

Recommendation 12, Page 18 - State Response

The State concurs with the recommendation that assignment of a full time PIO to the emergency government operation to provide for citizen information and operation capability is necessary.

Recommendation 13, Page 18 - State Response

The State will examine the need to expand the information contained in the press kit. The State considers the press kit to be subject to constant change. If assigned PIO personnel were available they would be updating this material on a continuous basis. The state, county and utility are cooperating on coordinated public information to be disseminated to the public in all affected areas on a periodic basis.

Recommendation 14, Page 18 - State Response

The State concurs that sufficient public information staff could better prepare the public, state and local agencies for such emergencies. Also the experience needed for effective emergency management and JPIC's can then be more readily gained and retained.

Recommendation 15, Page 19 - State Response

The State recognizes the need to further refine the State EOC. Organizational arrangements at the State EOC may preclude moving the RAD assessment operation from their present location.

Recommendation 16, Page 19 - State Response

Procedures will be developed for logging messages, posting conditions and appropriate maps/displays will be provided at the Area EOC's.

Paragraph 6, Page 19 - Kewaunee County Response

The second stairway in the Kewaunee County EOC was questioned. The main entrance and stairway were secure. The second one was partly blocked for the general public but could not be completely secured because the City Clerk's office (upstairs) had to have access to the vault in the basement.

Recommendation 17, Page 20 - Kewaunee County Response

We consider the Kewaunee County EOC had adequate maps. A series of large cards showing the emergency classification will be in place at the EOC. State and County are now working on a map showing populations by sectors.

Recommendation 18, Page 20 - Manitowoc County Response

A remodeling of the entire EOC in Manitowoc County will be underway in the next few months. The State will assist in map labeling.

Recommendation 19, Page 22 - State Response

Where local capability exists, we will encourage the counties to take a role in accident assessment.

Recommendation 19, Page 22 - Kewaunee County Response

The RADEF officer does not have sufficient equipment, but is very knowledgeable. The low caliber dosimeters were removed by the state last summer.

Recommendation 19, Page 22 - Manitowoc County Response

Manitowoc County has a trained, certified radiological officer, Sister Martina Van Ryzin, Dean of Academics at Silver Lake College, Manitowoc. Inadvertently, Sister Martina was not included as one of the key persons in the EOC during the January 21, 1981 exercise. Manitowoc County also has approximately 200 people trained in radiological monitoring but at this time their knowledge and availability are not built into the Manitowoc County Nuclear Incident Response Plan. Plans are underway to locate and train at least one other person to provide back-up support for Sister Martina as the County's RDO in conjunction with the State's educational offerings, utilize and train additional County personnel in radiological monitoring, and build their expertise into Manitowoc County's REP.

Recommendation 20, Page 22 - State Response

We expect that additional drills and exercises will improve the information flow between the State Radiological Coordinator and the operations staff.

Paragraph 3, Page 23 - State Response

The need for protection and possible sheltering of animals was recognized initially in the State EOC. However, the comment is correct that the notification to implement this procedure did not occur until after the human population evacuation had been in effect for a period of time. The EPZ was evacuated to nine miles because of information delivered predicated upon the furthest distant point of traceable radioactive occurrence. There was no need to go beyond that point. The reason all sectors were evacuated to nine miles was because traceable radioactive elements were found up to nine miles from the plant in several sectors and the instability of the wind conditions along Lake Michigan and long-term resident experience acknowledged the need for prudent protective action as to possible further difficulties in citizen movement and further additional potential for crossing of the plume because of later potential windshifts. It is accurate that a conservative and prudent approach to evacuation was followed due to the instability of the area immediately adjacent to such a large body of water as officials in the State have learned from past experience.

Paragraph 4, Page 24 - State Response

The state believes the comments concerning potassium iodide (KI) are inappropriate considering the lack of national guidance provided by FEMA and the NRC. Further, it is known that both of these federal agencies are studying the liability concerns around the distribution of the blocking agents as there has been serious concern expressed not only to, but through, the IOAC as recent as its meeting in Houston in February, 1981. Until these questions are cleared up, the State of Wisconsin will not proceed on expenditures of funds for potassium iodide.

Recommendation 21, Page 24 - State Response

Maps have been on hand. They are being similarly labeled by sector for use by participants at the state and local level.

Recommendation 21, Page 24 - Kewaunee County Response

Noted. County is working with state to supply standardized maps.

Recommendation 21, Page 24 - Manitowoc County Response

Manitowoc County has been advised by the State that they will take action to standardize maps utilized by the state and local EOC's.

Recommendation 22, Page 24 - State Response

The State recognizes the need for timely dissemination of messages relating to the care of farm animals.

Recommendation 22, Page 24 - Kewaunee Response

Dayton Ihlenfeldt, County Defense Board Chairman, took all necessary actions at 14:04. This is verified in the Kewaunee County EOC log.

Recommendation 22, Page 24 - Manitowoc County Response

Manitowoc County has been advised to react to provide timely and appropriate care of farm animal information when directed by the State of Wisconsin, Department of Health. The County is awaiting further information from the State.

Recommendation 23, Page 24 - State Response

The post exercise evaluation indicates that reception centers in both Manitowoc and Kewaunee County had successful demonstrations for registration and monitoring. We will continue to have a number of persons processed at reception centers in future exercises.

Recommendation 23, Page 24 - Kewaunee County Response

Kewaunee County complied with this requirement in the exercise and will continue to do so in future exercises.

Recommendation 23, Page 24 - Manitowoc County Response

Noted. In the future, larger numbers of people will be evacuated and taken to one of the designated reception centers to assure an adequate capability to process and monitor evacuees.

Recommendation 24, Page 24 - Kewaunee County Response

Noted. Kewaunee County complied with this recommendation during the exercise.

Recommendation 24, Page 24 - Manitowoc County Response

Key points along the evacuation routes will be posted or manned in future exercises for evacuees traveling to reception centers. The State has been asked to provide additional signs for this purpose.

Recommendation 25, Page 24 - State Response

The state addressed this point in its earlier comments concerning the narrative in the section entitled Protective Actions. The state will address this issue and develop a policy based upon federal information. The state moved, as was demonstrated in the exercise, to ensure that the non-availability of potassium iodide did not jeopardize the safety of the population.

Recommendation 26, Page 24 - Kewaunee County Response

Alternate evacuation routes will be considered and planned should there be a need to utilize them in the future.

Recommendation 26, Page 24 - Manitowoc County Response

Additional alternate evacuation routes will be considered and planned should there be a need to utilize them in the future.

Recommendation 27, Page 25 - State Response

Protection of key workers will be demonstrated or simulated, if funding is available, by the use of dosimeters in future exercises.

Recommendation 27, Page 25 - Kewaunee County Response

Kewaunee County lacks necessary equipment - low range dosimeters.

Recommendation 27, Page 25 - Manitowoc County Response

See response to Recommendation 19. In addition, Manitowoc County will assess availability of low reading dosimeters in the County for future needs. This information will be communicated to the State to assure Manitowoc County of sufficient supply.

With anticipated State cooperation, Manitowoc County will assure that key field personnel are properly trained in dosimeter use for future exercises.

Recommendation 28, Page 25 - State Response

In future exercises the State will develop this capability.

Paragraph 3, Page 26 - State Response

The State agrees with the action of the Two Rivers Hospital in allowing the members of the media to be present during the exercise portion taking place at the hospital. It is the State's contention that by allowing the media to observe and film portions of the exercise, the public is better served and better informed as to the nature and capability of their public and private enterprise officials to function under such conditions. Further, the state believes that FEMA and NRC should recognize this initiative into the exercise as long as the media do not inhibit the actual functioning capability of the exercise participants.

Recommendation 29, Page 27 - State Response

The State notes the positive commentary in this recommendation.

Recommendation 29, Page 27 - Kewaunee and Manitowoc County Response

Counties note the comment in this recommendation.

Recommendation 30, Page 29 - State Response

If funds are available the State will proceed with training programs at the local level.

Recommendation 30, Page 29 - Kewaunee County Response

The State will provide future training in the area of radiological monitoring techniques and terminology.

Recommendation 30, Page 29 - Manitowoc County Response

An on-going training program in radiological matters will be investigated with the State of Wisconsin, an educational program will be established for department heads, local officials, and supporting staff in all local jurisdictions within the plume EPZ.

Recommendation 31, Page 29 - Kewaunee County Response

Refer to response to Recommendation 3.

Recommendation 31, Page 29 - Manitowoc County Response

Manitowoc County plans a full critique with all county personnel involved in the January 21, 1981 test exercise. After the critique, any necessary changes to the county's plan will be made. Manitowoc County expects the State to provide radiological training for instrument use and general radiological awareness, as mentioned above.

Recommendation 32, Page 30 - Kewaunee County Response

County plan is updated, revised and reviewed periodically to assure compatibility with the State Plan. We have had several meetings since the exercise with various agencies on plan update.

Recommendation 32, Page 30 - State Response

The State has reviewed existing plans, has made necessary changes and they will be incorporated into the plan before the end of March 1981.

Recommendation 32, Page 30 - Kewaunee County Response

The County plan is updated, revised and reviewed periodically to assure compatibility with the State plan. Several meetings have been held since the exercise with various agencies to update their portions of the plan. Approximately 54 man hours were expended to update.

Recommendation 32, Page 30 - Manitowoc County Response

Manitowoc County will provide recommendations and input to the State of Wisconsin to assist in the revamping and updating of the existing plan. This information will be provided shortly after all information and comments are compiled from the county's own critique to take place shortly.

TEST

STATUS BOARD

TEST

Wednesday, January 21, 1981

07:03 A.M. Test Alert from Kewaunee Nuclear Plant

08:13 A.M. Opened Manitowoc County Emergency Operations Center

08:34 A.M. Liaison Officer dispatched to the Kewaunee Nuclear Plant

08:43 A.M. Received report regarding gas cloud in Kewaunee County

08:53 A.M. Reported wind shift from Kewaunee Nuclear Plant

09:44 A.M. Site Emergency established

09:52 A.M. State Emergency office is in operation. People within three miles of plant advised to stay indoors and under cover. Radiological teams in operation in the area.

10:18 A.M. General emergency condition declared at Kewaunee Nuclear Plant.

10:25 A.M. 3 Squad cars dispatched to advise people to stay indoors, for Gibson and Mishicot townships.

10:40 A.M. Governor advises to evacuate from the Kewaunee Nuclear Power Plant - radius of 9 miles - inform staff

10:44 A.M. JPIC notified to effect announcement contained on Page 20 of Manitowoc County Response Plan

10:57 A.M. Accident report - call for Two Rivers ambulance

11:10 A.M. Riverview mass care center manned and ready.

11:12 A.M. JPIC notified to initiate action on Page 22 of Response Plan.

11:25 A.M. Reception area activitated (Roncalli)

11:45 A.M. Red Cross dispatched ambulances to Hwy. 163 & Tapawingo Road and transport to Two Rivers Hospital

11:50 A.M. Red Cross moving evacuees to Mass Care Center from Roncalli

12:03 P.M. Road barricades established at 9 positions.

12:05 P.M. 549 people (simulated) moved from Roncalli to Riverview School

12:05 P.M. Notify City of Manitowoc EOC that people are being transported to Riverview School (message to Red Cross)

12:36 P.M. Radiological monitors & dosimeters set up at Roncalli by City of Manitowoc Fire Dept.

13:28 P.M. Manitowoc County has evacuated 11 of the 17 sections.

13:44 P.M. Farmers in 9 mile radius advised to move cattle under cover and restrict their food until further notice from Dept. of Ag.

- 13:50 P.M. Kewaunee Nuclear Plant advises Iodine 131 measures at .1 micro-cured per sq. meter. Manitowoc County continuing to evacuate 9 mile area.
- 13:55 P.M. Kewaunee Nuclear Plant terminated general emergency at plant. Monitoring environment continuing - airborne iodines confirmed in Gibson Township, Sec. 14 - Manitowoc County.
- 14:30 P.M. 17 of 17 Sections (all) in Manitowoc County have been evacuated. Also 11 of the 17 have been rechecked.
- 14:50 P.M. Recheck of evacuated area completed. Estimate 62% will actually leave area.
- 14:54 P.M. Updated meterological conditions from Kewaunee Power Plant. Stability Class "F"
- 15:00 P.M. One traffic fatality (DOA) transported to mortuary.
- 15:20 P.M. Silver Lake College opened to accommodate evacuees.
- 15:30 P.M. Officer dispatched to Silver Lake College to assist Social Services with mass care.
- 15:42 P.M. Everything east of a line from center of Kewaunee plant to center of Village of Mishicot is safe to re-enter.
- 16:00 P.M. Exercise completed - re-entry can be initiated immediately.

POST-EXERCISE EVALUATION

STATE OF WISCONSIN AND KEWAUNEE AND MANITOWOC COUNTIES
EXERCISE OF THE WISCONSIN PEACETIME RADIOLOGICAL EMERGENCY RESPONSE PLAN
FOR
KEWAUNEE NUCLEAR POWER PLANT

January 21, 1981

~~Dope~~ 8110200306

PREPARED BY THE:
FEDERAL EMERGENCY MANAGEMENT AGENCY, REGION V
PLANS AND PREPAREDNESS DIVISION
RADIOLOGICAL EMERGENCY PLANS AND PREPAREDNESS SECTION
FEDERAL CENTER
BATTLE CREEK, MICHIGAN 49016

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I. INTRODUCTION

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume lead responsibility for all off-site REP for nuclear power plants.

1. FEMA's immediate basic responsibilities in Fixed Nuclear Facility-Radiological Emergency Planning include:
 - a. Taking the lead in off-site emergency planning and review and evaluation of State and local government emergency plans for adequacy.
 - b. Determining whether the plans can be implemented, based upon observation and evaluation of exercises conducted in these jurisdictions.
 - c. Coordinating the activities of other involved Federal agencies:
 - (1) Nuclear Regulatory Commission (NRC)
 - (2) Environmental Protection Agency (EPA)
 - (3) Department of Energy (DOE)
 - (4) Department of Health and Human Services (HHS)
 - (5) Department of Health and Human Services (FDA)
 - (6) Department of Transportation (DOT)
 - (7) Department of Agriculture (USDA)

Representatives of these agencies serve as members of the Regional Advisory Committee (RAC) which is chaired by FEMA.

Formal submission of emergency plans to the RAC by the States and involved local jurisdictions is, in each case, followed closely by the exercising, critiquing, and evaluation of those plans. A follow-up Public Meeting is held to acquaint the citizenry with contents of the plans, answer questions about them, and receive suggestions on the plans.

2. A radiological emergency exercise was conducted January 21, 1981, between the hours of 7:00 a.m. and approximately 5:00 p.m. by the State of Wisconsin to assess the adequacy of the Wisconsin Peacetime Radiological Emergency Response Plan and State and local preparations to protect the public in the event of a radiological emergency involving the Kewaunee Nuclear Power Plant, operated by the Wisconsin Public Service Corporation near Kewaunee, Wisconsin. Parts of Kewaunee and Manitowoc Counties are within the ten-mile Emergency Planning Zone (EPZ) affecting about 15,000 residents. The Point Beach Nuclear Power Station is located approximately four miles south of the Kewaunee plant, and the ten-mile EPZ includes parts of the same two counties.

3. A critique of the January 21 exercise was held at 2:30 p.m., January 22, 1981, at the Fox Hills Resort Motel, Mishicot, Wisconsin.
4. A Public Meeting was conducted at 7:30 p.m., January 22, 1981, at the Fox Hills Resort Motel, Mishicot, Wisconsin.
5. General RAC objectives for the operational phase of the plans were to exercise and evaluate the following elements as described in the All-State Letter to State Emergency Services Directors in Region V, August 28, 1980:

Communications and Warning
Accident Assessment
Capability of Field Assessment Teams
Use of Protective Action Guides (PAGs)
Public Information
Evacuation Methodology that would be used
Provisions for Re-entry and Recovery of the Affected Area
Direction and Control

Comments on those general areas follow. The basic planning documents on which the State and local plans were developed and evacuated is NUREG-0654/FEMA REP-1.

6. Participating organizations were:
 - a. Wisconsin Department of Administration, Division of Emergency Government (DEG), Department of Health and Social Services, Division of Health (DOH), and support from relevant State agencies at the State DEG Emergency Operations Center (EOC) in Madison.
 - b. Wisconsin DEG East-Central State Area located at its EOC in Fond du Lac.
 - c. Kewaunee County Emergency Government and relevant supporting county agencies located at the County EOC in Algoma.
 - d. Manitowoc County Emergency Government and relevant supporting county agencies located at the County EOC in Manitowoc.
 - e. Manitowoc city Emergency Government and relevant supporting city agencies located at the city EOC in Manitowoc (as a backup for the County EOC).
 - f. Joint Public Information Center established at the Community House in Two Rivers.

7. Federal Observers were:

<u>OBSERVER</u>	<u>AGENCY</u>	<u>SITE</u>	<u>FUNCTION(S)</u>
1. P. McCollough ^{1/}	FEMA Reg. V	Various	Overview
2. G. Wenger	FEMA Reg. V	Various	Overview
3. R. Kellogg	FEMA Reg. V	Various	Overview
4. E. Robinson	FEMA Reg. V	State DEG EOC	Direction and Control, Warning/Alerting/Communi- cations, Public Information
5. R. Dorsey	FEMA Reg. V	State DEG EOC	Direction & Control, Warning/Alerting/Communi- cations, Public Information
6. W. Grant	NRC Reg. III	State DEG EOC	Radiation Health Team
7. J. Kraeger	FDA	State DEG EOC	Radiation Health Team
8. R. Sorensen	FEMA Reg. V	State DEG EOC	Evacuation, Re-entry/Recov.
9. R. Schwartz	FEMA Reg. V	Kewaunee Cty EOC	Direction & Control, Transportation, Public Information, Re-Entry/Recov.
10. D. King	FEMA Reg. V	Kewaunee Cty EOC	Accident Assessment, PAGs, Reentry/Recovery
11. J. Butler	FEMA Reg. V	Kewaunee Cty EOC	Direction & Control, Transportation, Re-entry/ Recovery
12. G. Rapp	FEMA Reg. V	Kewaunee Cty EOC	Evacuation, Host Centers, Warning/Alerting, Communications
13. P. Frost	FEMA Reg. V	Kewaunee Cty EOC	Warning/Alerting, Communications
14. G. Barber	FEMA (CPR) ^{2/}	Kewaunee Cty EOC	All Functions
15. F. Eglund	FEMA Reg. V	Manitowoc Cty EOC	Direction & Control, Reentry/Recovery, Public Information, Transportation
16. P. Tedeschi	EPA	Manitowoc Cty EOC	Radiation Health Field Team
17. W. Menczer	NRC Reg. III	Manitowoc Cty EOC	Accident Assessment, PAGs
18. R. Waters	FEMA Reg. V	Manitowoc Cty EOC	Alerting/Warning/Alerting/ Communications
19. W. Curtis	FEMA Reg. V	Manitowoc Cty EOC	Evacuation, Host Centers
20. S. Rizzo	FEMA Reg. V	Manitowoc Cty EOC	Direction & Control, Transportation, Public Information
21. R. Read	FEMA (CPR)	Manitowoc Cty EOC	All Functions
22. H. King	FEMA Reg. V	Joint Public Infor- mation Center	Public Information
23. B. Bailey	FEMA Reg. V	State Area EOC	All Functions
24. T. Izzo	FEMA Reg. V	State Area EOC	All Functions
25. V. Forde	REMA Reg. II	Various	Visitor-Overview

^{1/} RAC Chairman

^{2/} Center for Planning and Research (Under contract to FEMA)

8. Major functions witnessed by Federal observers were evaluated in accordance with the following:

Capability outstanding: excellent demonstration.

Capability good; exceeds minimum standards - some improvements recommended.

Capability acceptable; meets minimum standards - significant improvements needed.

Capability weak; does not meet minimum standards - essential improvements needed.

Capability not demonstrated or lacking.

9. State and local jurisdictions are required to take remedial actions, responsive on a point-by-point basis, to the formal recommendations of the RAC. One month from receipt of this document State and local jurisdictions should submit to the RAC the corrective measures they have taken or intend to take. If remedial actions cannot be instituted immediately, then a detailed plan scheduling and implementing remedial actions must be provided.

In this report 32 recommendations for correcting deficiencies are listed in continuing numerical sequence following the critique of each observed function.

Herein is an example of the format to be used when indicating remedial actions:

CRITIQUE: "The exercise was terminated without proper reduction from the 'General Emergency' classification."

SAMPLE: RECOMMENDATION #1 - Remedial Action:

Exercise Controllers have been directed to terminate future exercises after the nuclear plant is released from "GENERAL EMERGENCY" status and appropriate re-entry and recovery actions are taken according to State and local plans and procedures.

10. The Regional Director of FEMA, Region V is responsible for assuring the FEMA Associate Director, Radiological Emergency Planning, Washington, D. C., that any deficiencies noted in the exercise have been corrected and such corrections incorporated in the plan.

A State which seeks review by FEMA of its plan, with annexes, shall submit an application for review to the FEMA Regional Director of the Region in which the State is located. The application, in the

form of a letter from the Governor, or other State official as the Governor may designate, shall accompany copies of the completed State and county plans with an indication that deficiencies have been corrected.

Upon receipt of a State plan from the Regional Director, the Associate Director shall cause copies of the plan together with the Regional Director's evaluation, to be distributed to the members of the Federal Interagency Central Coordinating Committee (FICCC) and other FEMA offices with appropriate guidance relative to their assistance in the FEMA review process as described in 44 CFR Part 350, Federal Register, Volume 45, Number 123, Tuesday, June 24, 1980 (Review and Approval of State and local Radiological Emergency Plans and Preparedness). The Associate Director shall conduct such review of the State plan as deemed necessary prior to its being forwarded to the appropriate NRC licensing bodies.

II. EXECUTIVE SUMMARY

The objectives of the exercise were to assess the adequacy of the Wisconsin Peacetime Radiological Emergency Response Plan as it applies to State and local response capabilities to protect the public in the event of a radiological emergency at the Kewaunee Nuclear Power Plant, operated by the Wisconsin Public Service Corporation. The consensus of the 25-member Federal Observer Team is that the objectives of the exercise were achieved.

The exercise focused on the State and local off-site response, since the utility was not exercising. The utility did participate to the extent of providing appropriate interface with the State and the local jurisdictions for issuing notification of simulated emergency event classifications and radiological releases, but did not provide a representative at the Joint Public Information Center or the State and local EOCs.

The exercise demonstrated to observers a good State and local capability to protect the public in event of a nuclear emergency at the Kewaunee Nuclear Power Plant.

The Wisconsin Division of Emergency Government (DEG) demonstrated its capabilities to respond at its EOC in Madison during the Prairie Island exercise three months earlier. Significant improvements were noted, so that the State-level operation was well demonstrated. This performance included the State East-Central Area EOC at Fond du Lac. Thus only minor deficiencies were observed at the State level.

Both Kewaunee and Manitowoc Counties were participating in an exercise for the first time and demonstrated a good capability to protect the public. Some deficiencies were noted, however, most are relatively minor and none prevented a good performance, though some improvements are recommended. Also, additional experience and drills are needed to perfect their response.

General positive observations included:

- a. Professionalism and dedication by the participants and support by their elected officials at both the State and local levels.
- b. Improvement of the previously demonstrated capability at the State DEG EOC.
- c. The decision-making process concerning re-entry at both Counties was the best yet observed.
- d. Much improved security of the exercise scenario.
- e. Establishment of a Joint Public Information Center (JPIC).

General areas of deficiencies noted by observers included:

- a. Failure to demonstrate a shift change capability.
- b. Some improvement of displays and maps is needed at most local EOCs, and a related demonstration of ability to display status of events satisfactorily.

III. EXERCISE SCENARIO

SYNOPSIS AND CRITIQUE:

The exercise scenario was developed by the Wisconsin Division of Emergency Government with the assistance of the Wisconsin Public Service Corporation and the Kewaunee Nuclear Power Plant to provide an outline of a possible course of nuclear emergency events at the Kewaunee Nuclear Power Plant, which were simulated on January 21, 1981. The scenario was based on completely artificial events for the purpose of testing State and local emergency government response. The utility indicated that the design of the Kewaunee plant prevents such an emergency situation from actually occurring.

The exercise events were structured around a simulated accident at the Kewaunee Nuclear Power Plant that affected nearby political jurisdictions. The exercise was initiated at the Kewaunee Plant by a simulated leak of radioactive gas and small amounts of radioactive iodine (Alert declared). A light wind from the east carried the cloud inland with a lake-effect snowstorm causing some iodine fallout on the Kewaunee County farms west of the facility. Four miles west of the lake, the wind shifted from the northeast, and carried the cloud into Manitowoc County. Plant conditions seemed to stabilize when a second leak developed, releasing additional gases and iodine (Site Emergency declared). The effects of this second release exceeded the State Protective Action Guides, and action had to be taken to protect the population in the affected areas (General Emergency declared). This release was brought under control after about four hours, but radioiodine had contaminated the pastures within the snowband (about two miles by three miles) above State allowable limits.

A recapitulation of the scenario events, leading to State and local response, is shown below (all times shown were real times for exercise date of January 21, 1981).

EVENT OR CONDITION

Normal conditions at the Kewaunee Nuclear Power Plant (KNPP)	Prior to 0700
<u>Alert</u> condition (with potential release)	0700
Some release reported, then plant conditions stabilized.	0815
A new release occurs, <u>Site Emergency</u> declared	0935
Release continues, <u>General Emergency</u> declared, based on projected release exceeding PAGs	1015
Release terminates (General Emergency terminated-plant entering recovery phase)	1350

Gas cloud apparently disperses

1450

End of Exercise

1630 (approx.)

The scenario which provided a simulated nuclear emergency at the Kewaunee Nuclear Power Plant was adequate to test the State and local response plans. The duration of the exercise was sufficient for testing the State and local response and reentry functions. In contrast to the Prairie Island exercise, the times of the events in the scenario were kept confidential and were not known by participating organizations or individuals in advance of the exercise. Most participants were not sure of the exact day the exercise was to be held.

However, the scenario did not itemize the objectives of the exercise, and the synopsis was sketchy. In addition, there were no specific events scheduled dealing with the expected response of the State and each of the local jurisdictions.

RECOMMENDATION:

1. In addition to the simulated events at a nuclear power plant that initiate the exercise and result in State and local protective response, future scenarios should include the objectives of the exercise, appropriate evaluation criteria, simulated events, and expected response activities by the participating organizations (to include simulated events designed to involve all elements of the State and local emergency organizations). (Reference; NUREG-0654 N.1 and N.3).

IV. EVALUATIONS

A. ASSIGNMENT OF RESPONSIBILITY (ORGANIZATION CONTROL)

STATE:

The exercise clearly demonstrated to Regional Advisory Committee (RAC) observers that the primary responsibilities for State emergency response had been assigned and that supporting organizations at each level were aware of their responsibilities.

Improvements were noted at the State DEG EOC since the Prairie Island exercise three months earlier. These included better arrangement and organization of space, improved Direction and Control, evident support by State officials, and a demonstration of a full shift change.

The staff was adequate, seemed attentive and interested, and appeared to know what to do and how to do it. Depth of staffing was demonstrated by a smooth shift change. The second shift was briefed prior to taking over. Decisions were made in a professional manner, and the overall operation was well managed. Frequent status briefings kept the entire staff continually aware of the situation. There was good support by State officials. Members of the legislature were in the EOC for the initial briefing, and the Deputy Director of the Department of Administration and the Secretary of the Department of Transportation were at the EOC.

The State East-Central Area EOC at Fond du Lac functioned well in accordance with the plan. Their supporting role, primarily in the communications function, was well carried out. They kept in continual contact with the Joint Public Information Center (JPIC), relayed radiological data, and took appropriate protective actions for their staff.

RECOMMENDATIONS: No specific recommendations are necessary.

LOCAL JURISDICTIONS:

The exercise demonstrated to the RAC observers that the primary responsibilities for local emergency response in both Kewaunee and Manitowoc Counties had been assigned and that each individual and supporting organization was aware of assigned responsibilities. In addition, the Manitowoc City EOC, an alternate to the Manitowoc County EOC, was fully operational. It was fully staffed (one shift) and included the Mayor, Police and Fire Chiefs, radiological and communications personnel. Their supporting role to the county was well carried out.

A small number of the participating emergency staff members indicated that the exercise failed to significantly benefit them or their organization. For example, the Manitowoc County Coroner indicated that he wished that the scenario had called for more than one simulated accidental death (See Recommendation No. 1).

Neither Manitowoc nor Kewaunee County nor the City of Manitowoc demonstrated a capability for 24-hour protracted operations by conducting a full shift change. The Kewaunee County Chairman who directed the emergency operation for his County announced that provisions existed for changing the shift should operations continue until evening, and some second shift personnel were present to observe the operation. No shift change was demonstrated, however. In Manitowoc County the personnel asked to provide a shift change did so on an intermittent and unorganized basis.

Support by officials in both counties and the City of Manitowoc was outstanding and contributed to the good overall performance.

Direction and control functions were considered by observers to be good. In Kewaunee County the leadership analyzed information and made decisions promptly but could use some additional on-the-job training as more experience would further perfect their decision-making and operational processes. In Manitowoc County, good management and control was demonstrated. The observers noted that the participants could have been more attentive and responsive to briefings. Some observers got the impression that the briefings were more for their benefit than for the participants in view of the lack of some participants' reactions. Thus, more experience is also needed in Manitowoc County.

RECOMMENDATIONS:

2. In future exercises, each local jurisdiction should demonstrate a clear capability to function on a 24-hour basis for an extended period by replacing all personnel simultaneously, and by briefing all incoming personnel to bring them quickly up to date and provide continuity of operations. (Reference: NUREG-0654 A.4).
3. While a good capability was demonstrated by the local jurisdictions to manage emergency response in the event of an accident at the Kewaunee plant that affects the health and safety of the nearby populace, additional experience by means of exercises and/or drills is recommended. This will result in the fine tuning of emergency direction and control and response activities by the assigned leadership and supporting staff. (Reference NUREG-0654 A.2, N.1, N.2, N.3, and O.4).

B. ONSITE EMERGENCY ORGANIZATION

Section B, NUREG-0654 FEMA-REP 1, pertains only to licensee responsibilities for emergency response and is not included in the exercise evaluation of State and local plans.

C. EMERGENCY RESPONSE SUPPORT AND RESOURCES

STATE:

The State demonstrated an acceptable capability for contacting the appropriate agencies for requesting the use of available Federal resources. However, the events in this exercise resulted in no need to request specific Federal assistance, e.g., Department of Energy's Radiological Assistance Plan (RAP) and the Interagency Radiological Assistance Plan (IRAP).

The State DEG notified FEMA Region V (in both Chicago and Battle Creek locations) and kept them informed of progress of the events in the exercise, and also requested the Region to keep NRC, DOE, EPA, and the U. S. Coast Guard advised.

The State Radiological Laboratory, State Laboratory of Hygiene, was prepared to receive samples for radionuclide analysis. It is questioned if this laboratory is capable of providing adequate radionuclide analysis support. This laboratory was transferred during August, 1979 from the Department of Health and Social Services to the State Laboratory of Hygiene. Shortly after this transfer, the experienced radiochemist left the State Laboratory of Hygiene and problems were incurred in obtaining qualified personnel and maintenance of equipment. The routine performance of analyses has suffered without experiencing the necessity of responding to a radiological incident.

RECOMMENDATIONS:

4. Future exercise scenarios should provide events which require Federal assistance. Full participation in future exercises is essential for full interface to assure coordination of all available resources or requests for Federal assistance. (Reference: NUREG-0654 C.1, C.2, and N.1).

D. EMERGENCY CLASSIFICATION SYSTEM

STATE-LOCAL:

Knowledge of the standard emergency classification and action level scheme as described in the utility, State and local response plans was demonstrated to be adequate during the exercise. The State and local implementation of this section of their plan is acceptable.

RECOMMENDATIONS:

None.

E. NOTIFICATION METHODS AND PROCEDURES

STATE AND LOCAL JURISDICTIONS:

The State and local activities demonstrated a good capability to implement initial notification procedures in accordance with their current plans, and mobilization of the staff and manning of the EOCs was good. The Kewaunee County EOC activation was not observed since it apparently occurred over an hour early prior to declaration of the Site Emergency. Manitowoc County key officials were alerted by 8:25, which is too long. It is suggested that they consider speeding up the process by installing a communications system that could contact several hundred people at one time.

Notification of the public is primarily a local function, and the State was not involved. A good demonstration of the capability to notify the public was demonstrated by the two counties in accordance with their plans, using radio, TV, and emergency vehicles outfitted with bullhorns travelling all of the roads in the affected area. This method is marginal at best when a rapid notification for protective action is needed, and appears unacceptable during the hours of 11:00 p.m. - 6:00 a.m. when the bullhorn system is not supplemented by local radio and TV stations, which are off the air and would take too long to activate. Thus, alternatives should be investigated to warn the public more quickly than the door-to-door method allows. A number of approaches should be investigated and considered before plans are modified. It is suggested that the use of the existing severe weather warning system be investigated. The weather station at the Green Bay Airport covers both the 10-mile and 50-mile EPZs and could be used to activate special tone-activated receivers that could be placed in each home, school, business, etc. Such receivers, costing approximately \$30.00 each for about 5,000 total units could be purchased by the utility or purchased privately by mandates such as enacted for smoke detection devices in some jurisdictions throughout the Nation.

RECOMMENDATION:

5. Manitowoc County should investigate procedures to speed up their procedures for notifying officials and consider a communications system described in paragraph one above. (Reference: NUREG-0654 E.2, and Appendix 3, paragraph B.4)
6. Both Kewaunee and Manitowoc Counties should investigate a more rapid and reliable means to alert and advise the public on what protective actions to take, and give consideration to the weather warning-tone activated receiver system described in paragraph 2 above. (Reference: NUREG-0654 E.5, E.6, and Appendix 3, paragraph B.4).

F. EMERGENCY COMMUNICATIONS

STATE AND LOCAL JURISDICTIONS:

Good provision for communications among State-level organizations, specifically the State DEG EOC and the State East-Central Area EOC were observed. However, there were occasional (but not serious) delays noted between the State DEG EOC Radiation Health officials and the Radiological Health Field Teams.

The Operations Officer relied too heavily on written messages. The Operations Officer did not confer with the SRC so as to obtain a clear understanding of current incident status.

Both Kewaunee and Manitowoc Counties demonstrated an acceptable capability for prompt communications, but both need to improve their capabilities to communicate in accordance with their plans. Radio communications between the counties, as well as with the State, need improvement. Existing telephones in the Kewaunee County EOC are not adequate for a real emergency. The telephone lines from the KNPP are served by the same central office as the EOC, which would be deluged with calls. Additional telephones are also needed in the Manitowoc County EOC, which experiences an awkward communications situation because the Sheriff's Dispatch capability is on a different floor than the EOC.

RECOMMENDATIONS:

7. The KNPP EOF communications capability should include radio capability to the two county EOCs and to the State Area and State DEG EOCs. (Reference: NUREG-0654 F.1).
8. Improve telephone services and provide more phones in the Kewaunee County EOC. Also provide more direct radio communications capability between the two counties. (Reference: NUREG-0654 F.0)
9. Manitowoc County should consider the consolidation of the Sheriff Dispatch communications system with the EOC. (Reference: NUREG-0654 F.1 and H.3)
10. The State should review communications between the State and Radiological Health Field Teams to determine whether additional equipment or additional experience is needed, the latter through exercise and drills. (Reference: NUREG-0654 F-1; F-2; F-3 and M-2).

G. PUBLIC EDUCATION AND INFORMATION

STATE-LOCAL:

Good public information functions were observed at the State DEG EOC. They were considerably improved over the Prairie Island exercise. Press briefings were held periodically throughout the exercise. The press room was adequate with adequate maps and displays available. The media personnel present apparently were satisfied with the briefings and the facilities. The utility developed a series of excellent displays pertaining to the KNPP which were provided to the State DEG EOC, the JPIC, and county EOCs.

A Joint Public Information Center (JPIC) was established for the first time near the scene at the Community Center in Two Rivers. The JPIC concept is still evolving in Wisconsin and, in spite of the deficiencies observed, as well as the suggestions for improvement, the observers recognize that the JPIC would be an effective means for keeping the public informed. Each county assigned a Public Information Officer (PIO) to the JPIC. However, the Kewaunee County PIO was utilized part of the time for functions other than public information at the JPIC.

The State and local PIOs at the JPIC were capable, conscientious, and did a good job of coordinating emergency information. They proved their competence for conducting news briefings, and for the most part, disseminated accurate emergency information in a timely manner. They were handicapped, however, by lack of a technical spokesperson's presence from the utility.

Media representatives at the JPIC took their responsibilities seriously, performed realistically, and did a good job of reporting the news. One of the local PIOs should be complimented for handling dual responsibilities, handling local news coordination for the JPIC and feeding stories to the public via his own radio station's airwaves.

The facility for the JPIC was spacious and additional space was available. However, facility arrangements need to be re-examined to provide a closer working arrangement among the PIOs. Security enforcement and personnel to manage registration and the issuance of press passes was not demonstrated. The PIOs should have radio and TV receivers for monitoring the newscasts. Additional visuals are needed including large maps to show plume and evacuation area, relocation center locations, etc.

Both PIO rooms were occasionally left unattended with no one available to answer incoming calls. This suggests the need for assigning a full-time PIO and providing sufficient clerical support to handle the phones, type releases, etc. There needs to be a system for typing, reproducing, and logging news releases. A rumor control system is also needed. Thus, sufficient personnel should be assigned to cover the above tasks and to allow for a 24-hour protracted operational capability.

The press kit was helpful but needs to be expanded. The utility, State, and local organizations should prepare and publish public education materials. The new JPIC phone number was not publicized and calls concerning

the exercise were received from the public at the Manitowoc County EOC instead of the JPIC. The slide-film presentation on basic nuclear power information shown at the JPIC is to be complimented. Manitowoc County should receive praise for their efforts to the need to translate emergency information into foreign languages, Spanish and Vietnamese, for migrant workers and refugees living in the area.

RECOMMENDATIONS:

The recommendations relate to the observations described above, and are made to further enhance the JPIC concept through improvement of facilities and equipment, assignment of adequate PIOs and supporting personnel, and obtaining additional experience during future exercises and drills.

11. The JPIC facility arrangements should be modified to provide for closer working conditions among the PIOs; telephones, typewriters, reproduction equipment; additional briefing displays; and adequate security. (Reference: NUREG-0654 G.3 and G.4)
12. A full-time State PIO should be assigned for Public Education responsibilities and JPIC operations, supported by adequate clerical personnel. Backup personnel should be assigned to provide for 24-hour staffing over a protracted period. (Reference: NUREG-0654 G.4)
13. Additional work should be applied to the press kit, as well as development of public information materials for the public during normal periods describing the appropriate actions to take during a possible nuclear power plant emergency. (Reference: NUREG-0654 G.1 and G.2)
14. Public Information exercises and drills should be conducted at the JPIC to gain the experience needed to have an effective emergency Joint Public Information Center operation. (Reference: NUREG-0654 G.5, N.1, and N.2)

H. EMERGENCY FACILITIES AND EQUIPMENT

STATE:

Internal arrangements of the State DEG EOC were observed to be improved since the Prairie Island exercise, resulting in a good demonstration and generally good working conditions. A notable improvement was the separation of the Accident Assessment group (Radiological Health) from the primary operations room, resulting in improved working conditions. An adjacent room would have been preferable for the Radiological Health staff because a communications weakness between the two rooms was apparent. Displays were generally good, but the clocks were not positioned to be visible to personnel at the staff tables. The EOC is still noisy due to loud ringing of the telephones. Internal message handling was much improved as the runners knew where the messages were to be delivered and did a good job. Some of the difficulties apparently resulted from the dual normal use of the EOC space for regular office functions. Facility security was good.

The State East-Central Area EOC in Fond du Lac lacked adequate displays and maps and also had no specific procedures for maintaining a record of messages or events. Due to their supporting role, this did not seriously detract from the success of the entire exercise, but these deficiencies should be corrected.

Locating the SRC in a separate room is good because of the necessity of dose calculations being completed without external distractions and frequent communications with the forward monitoring teams. The SRC staff could be located in the room adjacent to the EOC (room with the window). In addition, use of duplicate maps would keep State EOC up-to-date on radiation levels at various sectors and zones.

RECOMMENDATIONS:

15. Refinements should be made to the State DEG EOC, to further improve working conditions, e.g., relocate clocks, install quieter telephone systems, and relocate the Radiological Health operations to an adjoining room, ideally with an access window to improve communications. (Reference: NUREG-0654 H.3)
16. Procedures must be developed for logging messages and posting conditions at the State East-Central Area EOC in Fond du Lac. Also, appropriate maps and displays should be provided so that the EOC staff can be kept fully aware of emergency conditions. (Reference: NUREG-0654 H.3).

LOCAL:

The Kewaunee County EOC in the basement of the Algoma City Hall was adequate, though small and noisy. The emergency power system was fully demonstrated a real plus. Displays in the EOC were acceptable, but need improvement. An up-to-date map of the entire ten-mile EPZ (including the areas of both Kewaunee and Manitowoc Counties) that indicated population data is needed. The Kewaunee portion of the EPZ that was displayed was not consistent with the current alphabetic zoning concept. The emergency classification status was not displayed, except momentarily on the chalkboard used as a status board. The technique for logging and typing of all events

and providing a copy to each staff member was adequate in lieu of a good status board. Facility access control was good, but a second stairway was left unguarded, although it was partially blocked by a partition across the opening.

Manitowoc County has a good EOC. Some additional furniture could be used. Maps were good, but they should have better legends and larger titles. Visuals depicting resources might prove useful. Access control/security was considered by observers to be outstanding.

RECOMMENDATIONS:

17. Kewaunee County should improve their EOC by providing more space, adding more telephones (with a quieter ringing capability), improving security, and improving the various maps and other displays. Specifically, a series of large cards showing emergency classifications ("ALERT," "SITE EMERGENCY," etc.) should be obtained for use during future exercises or an actual event. Larger maps showing evacuation routes, traffic and access control locations, as well as population by sectors are needed. A map showing the entire ten-mile EPZ (covering both counties) as well as a map showing the fifty-mile EPZ area are needed. (Reference: NUREG-0654 H.3 and J.10)
18. Minor improvements to the displays in the Manitowoc County EOC are needed, specifically better labeling of maps. Some additional furniture could be used. (Reference: NUREG-0654 H.3).

I. ACCIDENT ASSESSMENT

STATE-LOCAL:

The State demonstrated a good capability for providing methods, equipment, and expertise for rapid assessment of real or potential radiological hazards existing in the liquid or gaseous pathway. This included activation, notification, transportation, communications, and monitoring equipment.

State-level functions were successfully carried out at the State DEG EOC in Madison by the Wisconsin Department of Health and Social Services, Division of Health (DOH), and by the DOH Radiation Field Teams. Field teams were deployed to obtain iodine and gross gamma radiation measurements. The State Radiological Coordinator and Forward Team Captain communications were excellent resulting in rapid deployment of monitoring teams into preselected zones. Through the use of preselected monitoring sites, compatible maps and rapid communications, data was relayed to the State EOC for dose assessment purposes.

There was some minor delay or lack of coordination between DOH and the balance of the operational staff at the State DEG EOC, partially due to the physical separation of the two functions in the EOC. The reasons behind DEG's decision to enlarge the area DOH recommended to be evacuated were never made clear. (Note that this was also questioned by Kewaunee County, which was at a loss to find itself having to evacuate the bulk of its population, which was at right angles to the direction of the plume.)

The Wisconsin Radiation Protection Section did an excellent job of independent dose assessment. There is a significant need for mobile (field) laboratory support to complete rapid, on-site radionuclide analysis.

The DOH Field Teams did a good job, although they did not make any attempt to sample frozen surface water and cattle feed that was exposed to radiation. They did take appropriate samples of the snow and vegetation. There were some instances of minor delays of communication reported between the DOH Field Team and DOH officials at the State DEG EOC.

While Accident Assessment is not a local responsibility, the Kewaunee County officials indicated they would like to become more involved. They had their Radiological Defense Officer stay cognizant of the situation. They did more than take the usual passive role when receiving information from the State and asked for clarification of some of the information, particularly concerning the recommendation to evacuate all sectors of the EPZ in Kewaunee County to nine miles when the plume obviously affected only a small area along the southern border of the county. County participants indicated that the accident assessment information from the State would be more readily useful if conveyed in lay terms rather than following the technical language that was provided in the scenario.

RECOMMENDATIONS:

19. Encourage and assist the counties (where local capability exists) to take a more active role in accident assessment. This may require some modification of the plans in specific counties. It has been observed elsewhere that where the county staff closely followed the radiological situation, they were able to avoid unnecessary actions that would have followed receipt of garbled radiological information. (Reference: NUREG-0654 I.8 and P.4)

20. Improve coordination and flow of information between the DOH and DEG operational staff at the State DEG EOC. (Reference: NUREG-0654 I.8 and J.10)

J. PROTECTIVE ACTIONS

STATE AND LOCAL JURISDICTIONS:

The State Radiological Coordinator initially recommended sheltering of the population upon confirming the nuclear power plant dose projections. Protection of animal feed was also recommended. The SRC then calculated dose assessment and recommended evacuation based on field measurements.

The evacuation process was not monitored at the State DEG EOC. The State DOH and DEG maps differed - DEG maps apparently utilized the old numerical sector system, and DOH maps used the new alphabetic sector system. This caused confusion within the EOC and in the field, particularly when the State was attempting to define which specific sectors were clear for reentry versus those that were not.

Evacuation of the population was ordered and occurred several hours before the need for protection of animals was recognized. Although animals should have been put on stored feed early, the notification to do so occurred after the human population had been evacuated for about 2 1/2 hours. There is also some question as to why the entire EPZ was evacuated to nine rather than ten miles, and why the entire EPZ was evacuated rather than just those sectors within or adjacent to the plume exposure pathway. Apparently a very conservative approach to evacuation was followed. One problem that occurred was the evacuation of Kewaunee Hospital's population to Two Rivers Hospital. This would require travel directly through the plume! This indicates the health representatives did not appear to comprehend the predicted plume path and alternative areas for relocation.

The State Radiological Coordinator and the State Department of Agriculture exhibited excellent coordination in determining appropriate protective measures based on PAGs. This was exhibited through recommendations to shelter dairy animals, implement indoor feeding and watering, and protection of exposed feeds. The State needs to evaluate the complete communication/implementation process in future exercises. This would require the dairy plant field staff to simulate contact with all appropriate dairy farms.

Once the problem of animal protection surfaced, Kewaunee County determined that their dairy processor had already alerted the farms to the problem; in other words, their backup system functioned.

The protective measures implemented for dairy products (primary initial ingestion pathway) were excellent. It is acknowledged this exercise occurred during the winter (no fruit or vegetable growing season).

The State Radiological Coordinator and his Forward Team Captain had maps that provided preselected sampling and monitoring points in predetermined sectors. Monitoring data was reported using the predetermined sector and zone designators as specified in NUREG-0554.

Both counties adequately demonstrated the ability to staff and operate the Host Reception Centers and provide for the temporary welfare of evacuees. However, participants operating the Manitowoc County reception center at the Roncalli High School indicated they felt the exercise would have been more beneficial if a number of volunteers had been used for demonstrating the capability of the reception centers to conduct processing procedures.

In Kewaunee County, the Health Physicist monitoring team from the University of Wisconsin demonstrated a complete body monitoring (including thyroid scan) capability. Conducted just inside the front door, it was a very slow process. In a real situation, many people would have been kept waiting outdoors for their turn. The monitoring station could be moved into the gymnasium alongside the shower room. School officials have agreed with this idea.

In Manitowoc County, the successful demonstration was largely due to special volunteer groups like the American Red Cross, the Manitowoc Ham Radio Club, RACES, and the Manitowoc Senior Citizens Center, who band together via written agreements to provide for registration and transportation of evacuees and communications at the Roncalli High School.

No routing and traffic control measures were evident along the evacuation routes, to provide directions or assistance to evacuees.

The State of Wisconsin, although indicating they had distributed Potassium Iodide (KI) to emergency workers, have not obtained KI for this purpose. There is no indication of how KI would be distributed to fire and police personnel. The location of storage, method of distribution, and time for distribution was not adequately addressed. The State has not addressed the use of KI for the institutionalized persons.

RECOMMENDATIONS:

21. Standard maps with labelled sectors should be obtained and furnished to all participants at State and local levels. (Reference: NUREG-0654 J.10)
22. Attention must be given to the timely and appropriate care of farm animals in future exercises. (Reference: NUREG-0654 J.9)
23. A number of volunteers (e.g., about 30-40 persons) in each county should be evacuated and taken to one of the designated reception centers for full monitoring and processing procedures to test the evacuation and reception center system. (Reference: NUREG-0654 J.1 and J.12)
24. In future exercises, key points along the evacuation routes should be manned or posted to provide directions to evacuees traveling to host centers. (Reference: NUREG-0654 J.2 and J.10)
25. Since the decision was to evacuate the general population out to nine miles, this precludes the decision for using Potassium Iodide (KI). However, State needs to address the issue of KI in the State plan in order to make clear the utilization of KI during an exercise. (Reference: NUREG-0654 J.10 e-f)
26. Alternate evacuation routes should be planned so that evacuees will not be directed through the plume exposure pathway.

K. RADIATION EXPOSURE CONTROL

LOCAL JURISDICTIONS:

This function is primarily a local responsibility, with the exception of the State DOH Field Teams, who demonstrated an outstanding capability in this activity.

In general, the local jurisdiction acceptably demonstrated that the capability to control radiological exposure for emergency workers does exist, although a number of deficiencies were observed that need to be rectified.

The use of dosimeters was not observed in either county. In Kewaunee County, a few participants indicated a lack of low-reading dosimeters at the County EOC. In Manitowoc County, there was an apparent lack of knowledge in the use of dosimeters.

In Kewaunee County, traffic control points were established and manned at all 19 locations, and a detour was also established on Route 42. In Manitowoc County, nine locations were established.

There was confusion as to the amount of KI issued in Manitowoc County; as simulated, more was apparently issued than is available. No activity concerning use of KI was observed in Kewaunee County.

The State had no way of knowing the status of local access and traffic control measures and a system for providing the State EOC with periodic progress reports was not demonstrated.

RECOMMENDATIONS:

27. In future exercises, the specific activity of protection of key workers should be demonstrated by the use of dosimeters and the issuance of KI. (Reference: NUREG-0654 K.3 and k.4)
- 28 The State should establish a procedure for obtaining and displaying information on the status of traffic and access control. (Reference: NUREG-0654 K.4)

L. MEDICAL AND PUBLIC HEALTH SUPPORT

STATE AND LOCAL JURISDICTIONS:

The exercise demonstrated the capability of the local jurisdictions to cope with contaminated and injured individuals and to provide them with medical services. This was accomplished by means of a simulated accident. No specific related activity was observed at the State level.

A simulated vehicle accident of a monitoring team was arranged at the intersection of State Highway 42 and County Road BB (the county line between Kewaunee and Manitowoc Counties). Four victims were made up in believable moulage lying in the snow along the roadside. An ambulance arrived within 30 minutes. The paramedics systematically carried out triage procedures and subsequently transported the victims to the Two Rivers Hospital (the designated facility to handle injured and radiologically contaminated persons for both counties).

The Two Rivers Hospital demonstrated an excellent capability for isolating, evaluating, and treating contaminated and injured people. All necessary precautions were taken and proper procedures were followed, except for allowing news media personnel into the contaminated area (observers were informed by hospital personnel that during a real accident, news media personnel would not be allowed such access). Utility personnel (Health Physicists) were on hand to assist hospital personnel.

RECOMMENDATIONS:

None.

M. REENTRY AND RECOVERY

STATE AND LOCAL JURISDICTIONS:

The State and local jurisdictions demonstrated to observers a good capability to carry out reentry and recovery activities in accordance with their plans. Participation to the conclusion of the exercise was emphasized, rather than abruptly ending the exercise once the utility had indicated that the problem at the plant had ended.

The State Radiological Coordinator and State EOC exhibited the capability of indicating a reentry process can be started. State monitoring teams began remeasurements of areas to determine reentry policy. This information was being relayed to Public Service Commission, Department of Agriculture, and State EOC. The Wisconsin plan requires specification of reentry criteria so all agencies (State and county) will have this knowledge.

In this exercise, the State advised the counties that reentry could occur on a partial basis when some sectors of the evacuated area were clear and reentry was safe, while other sectors were still unsafe for reentry. This resulted in a thorough staff discussion before a decision was made in each county, and was the best yet observed in Region V. In Kewaunee County, officials considered delaying any reentry to avoid confusion until the whole area was declared safe. However, the Radiological Defense Officer reminded the staff that it could be many hours or even days before the area directly under the plume is safe. They then decided to move their access control barricades and permit reentry into the safe sectors. In Manitowoc County, similar activity occurred, and blockades were moved as areas cleared. They also continued to broadcast the reentry message for two hours after the conclusion of the exercise.

The State Radiological Coordinator's and DEG's maps were different. Thus, when the SRC recommended reentry to specific sectors and zones, DEG had problems transferring recommendations to their maps. DEG maps did not have specifications of Table J-1, NUREG-0654. The discrepancy in the maps designating the sectors caused some confusion and delay in advising the counties of the safe areas for reentry. When action is taken on Recommendation No. 21, this problem should be solved.

RECOMMENDATION:

29. The technique of declaring only part of an evacuated area safe for reentry is a good practice! This procedure should be followed in future exercises. (Reference: NUREG-0654 M.1, N.1, and N.3)

N. EXERCISES AND DRILLS

Section III of this report discussed the Exercise Scenario, and several recommendations which impact on future exercises and/or drills are made under various parts of Section IV Evaluations. Refer to Recommendation Numbers 1, 3, 4, 14, and 27.

0. RADIOLOGICAL EMERGENCY RESPONSE TRAINING

STATE/LOCAL:

The dose assessment staff coordinated by the SRC completed accident assessments in a timely fashion, communicated accurately with their field teams, and were capable of providing guidance to the Administrator, Division of Emergency Government.

There was a noticeable lack of familiarity with radiological matters and existing plans by some local officials, department heads, and supporting staff. Additional experience, through on-the-job training, exercises, and drills will serve to improve an already good performance.

RECOMMENDATIONS:

30. Appropriate familiarization training in radiological matters should be provided to local officials, department heads, and supporting staff in all local jurisdictions within the plume EPZ. (Reference: NUREG-0654 0.1, 0.4, and L.5)
31. Additional training resulting from exercises and drills should serve to enhance local performance in carrying out existing plans. (Reference: NUREG-0654 0.1 and 0.5)

P. RADIOLOGICAL EMERGENCY RESPONSE PLANS

STATE AND LOCAL JURISDICTIONS:

Based upon the observations of the exercise, the Wisconsin Peacetime Radiological Emergency Response Plans are generally good; however, some fine tuning should be done to update the plans and assure that State and county plans are completely compatible. Efforts should be made to assure familiarity of these plans by all affected jurisdictions and emergency response personnel.

RECOMMENDATION:

32. Based on the experience of this exercise, the State should review the existing plans and make necessary changes to assure that they are fully up to date and completely compatible between the State and the local jurisdictions. (Reference: NUREG-0654 P.4 and P.5)