UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

February 24, 1983

NOTE TO: Gus Lainas, A/D for Operating Reactors, DL

FROM: Robert Capra, Technical Assistant, DSI

SUBJECT: PLANT-SPECIFIC LICENSING ACTION CHANGE FOR DSI

Reference: Memorandum, Roger J. Mattson to Darrell G. Eisenhut, dated 10/12/82, Subject: DSI's FY-83 Plant-Specific OR Action Schedule

Based upon your request in the attached Division of Licensing Work Request, DSI has accepted the following plant-specific licensing action:

Plant: Trojan DSI Branch: METB

TACS NO: 49636 Scheduled Target Date : 03/01/83*

Subject: Mt. St. Helens-Spirit Lake Dam*

Unless otherwise indicated in the space below, DSI has accepted the work by the scheduled target date without impacting other scheduled OR actions.

*Note: This TAC involves the review of the draft USGS/FEMA report on possible hazards posed by the failure of Spirit Lake Dam. (To be provided about 02/22/83). The review may involve a site visit and additional review depending upon the Quick Look report (Target date 03/01/83)

This note represents change number 164 to the reference memorandum.

R. Capra

R. Capra, T/A DSI

Enclosure:
As stated

cc: R. Mattson
DSI A/D D. Muller
DSI BC A. Cammill
[redacted]
J. Thoma, DL
DSI File

C/15

Enclosure 2

Routing Slip Priority 1

TRANSMITTAL OF DIVISION OF LICENSING WORK REQUEST

SPECIAL HANDLING - PROCESS WITHOUT DELAY

TAC#-Plant Name-Title 49636 - TROJAN - MT. ST. HELENS - SPIRIT LAKE DAM

Description of review requested:
1. Review draft USGS / FEMA report on possible hazards posed by failure of Spirit Lake dam. (to be provided by PM about 2-22-23).
2. Review may involve site visit and further review depending on safety assessment of 1. above.

Requested target date "Quick Look" at USGS report by ~ March 1, 1983.

Basis for request date:

SEQUENCE	NAME		DATE
1. Originator	~~C. Trammell~~	CMT	2-17
2. OR Branch Chief	R.A. Clark	RAC	2-17/83.
3. OR A/D	G. Lainas	GL	2/17/83.

☐ This action is requested to be added to the review branch's current commitments

☐ This action is requested to be completed in lieu of TAC# _____ for _____ (Plant Name)

4. Review Branch Chief	(METB) W. Gammill	WG	2/24/83
5. A/D	D. Muller		
6. Division Director	R. Mattson	RJM	2/24/83

☒ This action is accepted for completion with a target date of 3/1/83

☐ This action is accepted for completion with a target date of _____ in lieu of completing TAC# _____ in this fiscal year

7. Return to Review Branch Chief for assignment of reviewer and retention of work package

Joe Lavine (Reviewer's Name) JXL (RAMS Initials)

8. Return routing slip to originator

FROM	MAIL STOP	PHONE
C Trammell	428	27389

2-23-83

PGE

JWL-T04-83
COPIES TO:
B. D. Withers
W. S. Orser
R. L. Steele
T. Bushnell
T. D. Walt
G. A. Zimmerman
TNP:FSAR:2.5

TELEPHONE CALL

By J. W. Lentsch of PGE

To Dave Kresch of USGS/WRD

Date February Time

Subject St. Helens Mudflows

I returned Dave's call to Bill Babcock, wherein he inquired about previous studies by PGE of the impact of St. Helens mudflows on Trojan. Dave said that the USGS/WRD has recently initiated a study of the effects of a debris dam failure at Spirit Lake on Cowlitz River mudflows and impacts on the Columbia River in the upstream and downstream directions. This is a one-year project, aimed at assessing the effects of both flooding and mud accumulation in the Columbia River. Dave was curious as to what studies have been done previously for Trojan. He also requested certain information on the site topography and intake structure design at the Plant.

He said this study will use the same source term from the dam failure as assumed in the recently completed study of the Cowlitz River.

I told him that we would send him a copy of the applicable sections from our FSAR, together with copies of correspondence to the NRC on the subject. This information will include site and intake structure details and elevations.

JWL/4s16A24

16 Mar 1983

NOTE TO: R. Jackson
S. Brocoum
✓ C. Trammell

From: H. Lefevre

Subject: FEMA Jan. 1, 1983 "Fingers" Relative to Volcanic Related Hazards

The report is overall quite informative. I have no specific significant comments other than the observation that a lot of organizations are addressing (or will be addressing) the volcanic hazard aspect of the Trojan area. I would suggest that NRC spread the word that we are interested in being kept current by having you on the proper distribution lists. HQ(?) can handle the geologic-seismologic aspects of our dealing with the USGS but the other organizational reports are more likely in C. Trammell's area of responsibility.

H. Lefevre

Federal Emergency Management Agency
Region X Federal Regional Center Bothell, Washington 98011

March 7, 1983

Charles Trammell
U.S. Nuclear Regulatory Commission
MS 428
Washington, D.C. 20555

Dear Mr. Trammell:

* Enclosed is a revised version of our Findings for the Trojan Site. Normally, my National Office forwards these to Edward Jordan's office. I do not know what happens to them after they reach NRC.

I understand that Bill Brown forwarded you 5 copies of the mudflow assessment study.

If you have any questions on the findings or study, please let me know.

Sincerely,

Richard W Donovan
Richard W. Donovan
RAC Chairman

Enclosure

* Perhaps we could request to be placed on distribution for future versions of the Findings report.

~~8305150234~~ 04pp

Federal Emergency Management Agency

COPY

Region X Federal Regional Center Bothell, Washington 98011

February 23, 1983

MEMORANDUM FOR DAVE MCLOUGHLIN, ACTING ASSOCIATE DIRECTOR
STATE AND LOCAL PROGRAMS AND SUPPORT

FROM: Wm. H. Mayer
Regional Director

SUBJECT: Findings and Determinations for Portland General Electric's Trojan Nuclear Power Plant

Last January we forwarded to you our findings (44 CFR 350.11) for the Trojan site (States of Oregon and Washington), with our recommendation that FEMA approval be granted. On July 6, 1982, your office granted approval in accordance with 44 CFR 350.12.

Although our approval process allows for withdrawal of approval (44 CFR 350.13), it does not call for reaffirmation of adequate offsite preparedness. It has been the position of our Chairman of the Regional Assistance Committee (RAC) that an annual reaffirmation should be made. I support this position and this letter with attachment serves that purpose.

Following is a brief summary of activities that the Region and the RAC has either monitored or observed, evaluated, and critiqued since our findings statement of last winter.

1. Activities related to Mount St. Helens/Spirit Lake Disaster and Emergency Declaration.

2. Training activities of both States, counties, and the licensee as they relate to offsite preparedness.

3. Public education program for permanent and transient adults.

4. Second annual Trojan Siren Test (Alert and Notification System).

5. Health Physics Drill and Exercise of the Near-Site Emergency Operations Facility - September 16, 1982.

6. Full-scale Trojan Exercise - November 28, 1982.

7. Media Orientation Program.

8. Monthly Communications Drills.

9. Review of Draft and Promulated Changes to Plans/Procedures.

The RAC Chairman prepares a monthly list of significant events. The majority of the significant events are corrective action items resulting from reviews of the exercise or drill critiques and plans or procedures. Correspondence over my signature forwards these schedules to the designated heads of each State, county, and the licensee each month.

COPY

Last month the RAC updated the individual review and evaluation documents for each set of plans and procedures (as called for in Guidance Memorandum No. 16).

The RAC updated the findings statement. The Region updated that portion of the findings statement related to the volcanic phenomenon in parts requested by the Nuclear Regulatory Commission (NRC). The Region has received commitments for corrective action as called for in our critiques of the small-scale and full-scale exercise conducted in 1982.

It is the Region's and the RAC's opinion that no major deficiencies exist in either the preparedness posture or response posture of the States and local governments for the Trojan site. We believe that the plans and implementing procedures are adquate on the basis of the criteria documents (REP-1 and -2). We believe that the response capabilities exist among the designated agencies within both States and local governments, and that these agencies have demonstrated their ability to implement the plans.

In view of the continuing NRC interest in the volcanic and related natural hazards assessments, we suggest that the revised Part I be forwarded to them since it is significantly different from that submitted by us in January 1982.

In summary, we believe that the plans/procedures, preparedness posture, and response capabilities of the States of Oregon and Washington, and affected local governments, are adequate to protect the health and safety of the public in the vicinity of the Trojan Nuclear Power Plant. The States and local governments have demonstrated continued improvement in all areas. It is the RAC's position that no significant deficiencies exist. In the Region's opinion, there is reasonable assurance that appropriate protective measures can and will be taken offsite in the event of a radiological incident at the Trojan Nuclear Power Plant.

If you or your staff have any questions, please direct them to Richard Donovan, RAC Chairman.

Attachment

FEMA Findings and Determinations
for
Portland General Electric's Trojan Nuclear Plant

Date: Initial Finding - January 1982
Revised Finding - January 1983

I. Introduction

A. Identification:

1. Facility. The Trojan Nuclear Power Plant is the only licensed nuclear power plant in the State of Oregon. The Trojan Nuclear Power Plant is owned and operated by the Portland General Electric Company (PGE), a private utility licensed to operate in the State of Oregon. It is located in Columbia County, Oregon, on the bank of the Columbia River at approximate river mile 72.5, 42 miles north of Portland, Oregon.

2. Governments in the Plume EPZ. There are two counties within the plume emergency planning zone (EPZ): Columbia County, Oregon, and Cowlitz County, Washington.

3. Governments in the Ingestion EPZ. There are 13 counties within the ingestion emergency planning zone (EPZ): Oregon counties are Clackamas, Clatsop, Columbia, Multnomah, Tillamook, Washington, and Yamnill; Washington counties are Clark, Cowlitz, Lewis, Pacific, Skamania, and Wahkiakum.

4. Response Organization. The State of Oregon's lead agency for regulation of, and response to, radiological incidents is the Oregon Department of Energy (ODOE). It works closely with the Emergency Management Division (EMD) and the Health Division (HD) who have the respective responsibilities for general State emergency planning and coordination of emergency operations and radiological response. Other departments and Columbia County, Oregon, are assigned specific support roles based upon their respective responsibilities. The State has responsibilities for both the plume and ingestion emergency planning zones.

The State of Washington's lead agency for response to radiological incidents is its Department of Social and Health Services (DSHS). It works closely with the Department of Emergency Services (DES) which has the responsibilities for all emergency planning and the coordination of emergency operations. Other departments are assigned specific support roles based upon their respective responsibilities. Overall, the State has responsibility for the ingestion emergency planning zone, and Cowlitz County, Washington, has the responsibility for the plume emergency planning zone. Within the county, the Sheriff and the Sheriff's Department is the lead agency. The emergency planning and coordination of emergency operations are the Sheriff's responsibility.

B. General Background:

1. Plans. The title of Oregon State's plan is "Oregon State Trojan Emergency Response Plan." It was issued in November of 1980, implemented in January 1981, and updated September 1981 and August 1982. It was submitted to FEMA on December 9, 1980. The Plan was developed by the Department of Energy.

The title of Washington State's plan is "Washington State Fixed Nuclear Facility Emergency Response Plan." It was issued in March 1981, and implemented in March 1981. It was submitted to FEMA on March 29, 1981. The Plan was developed by the Washington Department of Emergency Services.

The title of the Cowlitz County plan is "Cowlitz County Trojan Emergency Response Plan." It was issued in December 1980, implemented in April 1981, and updated in September 1981 and August 1982. It was submitted to FEMA in December 1980.

2. Special Circumstances.

a. Geographical Situation. The Trojan plant site is located in the Oregon Coast Range. The Coast Range is bordered on the north by the Olympic Range and on the south by the Klamath Mountains.

The Coast Range section is approximately 250 miles long (running along north-south axis) and averages 50 miles wide. In the vicinity of the site, altitudes are generally below 2,000 feet. The area is drained by the Columbia River and by numerous small stream tributaries. West of the site, there is an abrupt rise in elevation to approximately 1,500 feet along the north-south axis. Several streams have their headwaters along this divide, and they flow easterly or northeasterly to the Columbia River. Stream gradients are high until they reach the floodplain of the Columbia River. Valley profiles are V-shaped.

The Cascade Range east of the site is marked by a chain of volcanic cones. The closest cone is Mount St. Helens, approximately 36 miles from the site. It is an active volcano with a variety of activity. Over the last 2 years the nature of the activity spans the range from earthquakes and ash emission to several major explosive eruptions (May 18, 25, and June 12, 1980), and a series of non-explosive eruptions.

The climate of the plume exposure EPZ around Trojan is typical of the Pacific Northwest coast and is characterized by wet winters and dry summers with mild temperatures all year long. There is a low probability of snowfall (greater than 1 inch is less than 1 percent) or heavy fog (visibility less than 1/4 mile is less than 2 percent).

b. Evaluation. The Region has been requested to consider, in its evaluation, the degree of planning for and potential effects upon response capabilities with respect to volcanic phenomena (ashfall, mudflows, floods, and landslides). The Region approached this evaluation along three separate routes.

(1) Short-term Hazards. The Region hired Thomas Dunn and Luna B. Leopold (both hydrologists) to conduct a study of the flood and sedimentation hazards in the Toutle and Cowlitz Rivers. The report was published in January 1981. It reviewed the potential for: 1) catastrophic breaching of Coldwater and Castle Creek Lakes; 2) mudflows and floods generated by pyroclastic flows; 3) rain and snowmelt floods; and 4) sediment transport, deposit, and channel changes.

This study was made available to PGE, who utilized portions of it in revising their evacuation analysis report and the various procedures for evacuation. *

The U.S. Army, Corps of Engineers, performed emergency work to mitigate the potential for catastrophic breaching of Coldwater and Castle Creek Lakes. The Corps performed several other projects to enhance the dike system of the Cowlitz and improve the ability of the hydrologic system to hold snow and rain floods. Revisions were made to floodplain maps and detailed flood evacuation plans/procedures were developed for Cowlitz County. Other work was performed to enable the river system to more effectively handle the sediment transport deposit and potential for channel changes.

(2) Risk Assessment.

(a) Automotive. The Region received opinions from the U.S. Department of Transportation, Research and Special Programs Administration; Ford Motor Company, Car Service Engineering Department; General Motors, Service Section; and the U.S. Army, Tank Automotive Command. The general concensus was that a normal vehicle could be driven at least 50 miles before failure under volcanic ash fallout conditions of amounts up to 1 inch in depth. Amounts of ash in the range of 2 to 4 inches could be expected to cause catastrophic failure of passenger vehicles within 10 to 20 miles of road travel under these conditions.

This information was made available to PGE for use in their revision of the evacuation analysis report.

(b) Volcanic eruption and related hazards. The Region received opinions from the U.S. Geological Survey, Reston, Virginia, and the U.S. Geological Survey, Cascade Volcano Observatory. Major conclusions are hereby summarized.

The percent of ashfall which might affect the plume EPZ is 2 to 5 percent. Also, the plume EPZ could be affected by ashfall from eruptions on Mt. Hood, which is considered dormant at this time.

Mudflows and floods could eliminate the I-5 bridge across the Toutle River and several other minor roads. PGE's revised evacuation analysis and the county's flood plan recognize the possibility of this bridge and other roads being eliminated.

* In my view, this is obsolete info.

The current level of risk as assessed for Mount St. Helens is much lower than it was in 1980. * Risk effects of those hazards on man are even lower because the USGS prediction capability is improving. The mountain is considered to be in a period of episodic dome growth. This non-explosive dome growth could be marked by small ashfalls and relatively small pyroclastic flows. It is important to realize that there is virtually no chance of another eruption like that of May 18, 1980, occurring within the next few years. Since the last explosive eruption (October 1980) all volcanic related potentially lethal effects have been confined to the crater and immediate vicinity. Since October 1980 the USGS has been able to predict all dome-building eruptions 2 to 4 weeks in advance of their occurrence. If another explosive eruption (a very improbable event) were to occur, the USGS believes that monitoring would detect the buildup in time to make a variety of preparations. It is important to note that dome growth can be a long drawn out phenomenon. Activity associated with the Goat Rocks' dome at Mount St. Helens probably continued for more than a decade in the mid-1880's.

(c) Non-volcanic hazards. The Region received an opinion from the Department of the Army, U.S. Corps of Engineers; U.S. Department of Interior, Geological Survey, Water Resources Division; and the U.S. Weather Service. The consensus is that floods and risk of serious floods are much higher as a result of the May 18, 1980, eruption. Despite the concluded mitigation efforts, the potential will remain very high through the next decade. The evacuation analysis report, prepared by PGE, was adopted by Cowlitz County. The evacuation procedures for Cowlitz County, and the related floodplain, clearly recognize these risks and have considered the implication of the potential damage/destruction to northern egress routes.

(d) Spirit Lake Hazards. [redacted] Water Resources Division [redacted]" Narrative and map portions of this report clearly show that major and minor Cowlitz County transportation routes will be destroyed or otherwise blocked should short-term mitigation measures for the Spirit Lake hazard fail. Disruption would result in short- and long-term impact on the ability to execute a Trojan evacuation as currently planned in both Washington and Oregon. An evacuation for a Spirit Lake event would create a short-term conflict with a Trojan evacuation. Long-term impact would be from the radically revised transportation routes and traffic load required to bypass blocked routes.

The Geological Survey report addresses only the mudflow hazard to the Toutle and Cowlitz Rivers. The report states that a Spirit Lake breach can be expected to deliver 1.09 million cubic feet per second of mudflow at 65% sediment loading by volume to the Columbia River.

* This is true, but it pertains only to volcanic eruptions - not the Spirit Lake Outflow "Hazard" we are now confronted with.

Technical data supporting the report shows that mudflows will be maintained at close to peak flows for several hours. Experience of Columbia River blockage resulting from flood/mudflows generated by the Mount St. Helens volcanic eruption of May 18, 1980, infers that the much greater mudflow possible from a Spirit Lake event may have disruptive impact to Trojan evacuation routes in the vicinity of the Columbia River and to the Trojan site. The Geological Survey, at the request of the Federal Coordinating Officer for the Spirit Lake Emergency Declaraton, is preparing a technical proposal to evaluate the hydrologic hazards of a Spirit Lake event to the Columbia River. [redacted] (1)

* [redacted]

(3) Long-term Mitigation/Warning. The Region has been active on several fronts in regard to the evolving problems associated with Mount St. Helens:

(a) The Region chairs an interagency committee under the auspices of the Federal Coordinating Officer for the Mount St. Helens disaster and the Spirit Lake emergency. This committee consists of FEMA; USGS, Cascade Volcano Observatory and Water Resources Division; U.S. Weather Service (Regional, River Forecast Center, Washington and Oregon State Offices); USDA (Forest Service and Soil Conservation Service); and U.S. Army, Corps of Engineers. This committee meets several times a year to ensure coordination with respect to data collection, risk assessment, mitigation measures, and warning procedures.

(b) The Region chairs the nonstructural Hazard Mitigation Task Force, as specified under Section 406 of the Public Law 93-288. This committee consists of FEMA; USDA; U.S. Army; U.S. Weather Service; DHUD; USGS; Cascade Volcano Observatory and Water Resources Division; DOC; DOT; Small Business Administration; State of Washington; and Cowlitz County, Washington. The task force prepared an interagency flood hazard mitigation report (11/13/81). The report was aimed at mitigating future public and private damages from potential flooding along the Toutle and Cowlitz Rivers. Funding of many of the recommendations will be dependent upon National level action and will be one of the decision items of the National Hazard Mitigation Task Force.

(c) With Regional assistance and coordination, Cowlitz County has implemented a recommendation of the Hazard Mitigation Task Force by initiating the Toutle-Cowlitz Rivers Watershed Management Plan. The Plan is to consolidate a number of Cowlitz County community development issues and provide policy for future use of the basins of the Toutle and Cowlitz Rivers (post Mount St. Helens). The Plan incorporates subjects related to emergency planning, including hazard assessment, operational capacity, and alert-notification requirements to deal with Mount St. Helens and Spirit Lake related hazards. The Plan represents an interactive process so as to develop emergency preparedness capacity integrated and supportive of preparedness for preexisting Cowlitz County hazards.

(1) We should keep appraised of this effort.

* We should obtain this "guidance".

(d) Regional coordination of specific actions taken to mitigate the Spirit Lake hazard include:

1) The Department of Army, Corps of Engineers, has undertaken a two element program of structural measures for mitigating the Spirit Lake hazard. The first element is the now implemented short term pumping system designed to maintain the annual average level of Spirit Lake below an established critical level. The second element is to determine and implement a solution or program of solutions to achieve long term mitigation of the Spirit Lake hazard. The U.S. Army, Corps of Engineers, is scheduled to * complete, by November of 1983, a report of alternatives and recommendation for a long term solution.

2) A joint initiative of Federal, State, and local governments has implemented a warning system to deal with a Spirit Lake breach. That portion of the warning system for alert and notification of the resident and transient population of Cowlitz County, within the Spirit Lake hazard area, has been integrated with and extends the exisiting Trojan alert notification system.

3. Socio-Economic Factors.

The Trojan Nuclear Power Plant is located in the northwestern section of the State of Oregon on the Columbia River which is the border between the States of Oregon and Washington. In Columbia County the economy is geared to the timber industry. Its population is approximately 35,000 with 9,000 located in the plume EPZ. In Cowlitz County, the economy is a mix of heavy and light industrial processes, port operations, and timber-related harvest and manufacturing industries. Its population is approximately 80,000 with 59,000 located in the plume EPZ.

4. Volcanic Contingencies.

The State of Oregon's Trojan Response contains a volcanic eruption contingency whereby the Oregon Emergency Operations Plan would be implemented. Damage assessment information would be relayed to Trojan and Columbia County, or if Columbia County's EOC was made inoperative, the State would assume complete responsibility. If key elements essential for execution of the Trojan response are made inoperative due to a volcanic eruption or its affects, Oregon would restore those elements as soon as possible or arrange for other compensatory measures.

The State of Washington has made a commitment to include similar contingencies in their next Fixed Nuclear Facility Plan review.

* Cowlitz County has developed a contingency plan separate from their Trojan Response Plan.

Please note that PGE has arranged for representation at the Federal Volcanic Coordinating Center.

C. Materials Available for Examination:

In addition to the State and local plans/procedures, we have had access to evaluations by the Region and the Regional Assistance Committee

* We should request that we be included on the initial distribution list.

(RAC) for the States' and locals' plans; and the critique by Region and RAC of the joint approval exercise and followup exercise. The Region has retained copies of the records of public meetings which were conducted in Columbia County, Oregon, and Cowlitz County, Washington. They state that all particulars were addressed in the plans/procedures revision that followed these public meetings.

II. Evaluation

Following is the integrated evaluation of the Federal Emergency Management Agency, Region X (hereafter referred to as Region), and the Regional Assistance Committee, Region X (RAC), for the plans/procedures, preparedness, and capabilities of the States of Oregon and Washington; Columbia County, Oregon; Cowlitz County, Washington; and the Portland General Electric Company (PGE), as it pertains to the Trojan Nuclear Plant. For more specific findings, reference the Review and Evaluation for Oregon, Washington, and Cowlitz County, Washington, and those comments made in the various critiques of the exercises.

A. Assignment of Responsibility (Planning Standard A):

The three governments (Washington, Oregon, and Cowlitz County, Washington) have plans that identify and assign the lead and support agencies with the various responsibilities called for in Planning Standard A of NUREG-0654/FEMA-REP-1. PGE's plan cross references these agencies with respect to identification of lead agencies.

Some of the written agreements referring to the concept of operation, emergency measures, mutually acceptable criteria for their "implementation," and arrangements for exchange of information, have been executed.

1. PGE has executed a separate Memorandum of Understanding (MOU) with the State of Washington and Cowlitz County, Washington. The State of Oregon, because of its MOU with NRC, and State legislation which gives them certain regulatory authorities over PGE, does not believe an MOU is necessary.

2. The States are updating the 1974 Radiological Accident Assistance Agreement.

3. The RAC's critique of the approval exercise called for the execution of an MOU on the coordination of emergency public information. The State of Washington, Cowlitz County, Washington, and the two major Federal response agencies have agreed to particpate in the MOU; Oregon has not.

Summary. With the exception of the MOU on the coordination of emergency public information, all basic agreements, planning assignments, and staffing assignments are in accordance with Planning Standard A. The Region and the RAC find the absence of the executed MOU is a minor deficiency. See discussion under Planning Standard G - Public Education and Information.

B. Emergency Response Support and Resources (Planning Standard C):

1. Radiological Assistance. The States of Oregon and Washington, and PGE, have made provisions for incorporating Federal response capability

into their operations plans. A specific MOU between the U.S. Department of Energy, the States of Oregon and Washington, and PGE has been executed. The MOU specifies the Federal radiological resources expected, including times of arrival.

2. Emergency Public Information. Upon declaration of a Site-Area Emergency or General Emergency, the Regional elements of the Federal Government will activate their response plans. As part of this response, a Joint Information Center (JIC) will be established by FEMA and NRC. The State of Washington and Cowlitz County have agreed to enter a MOU with respect to the concept of operation and agreements for exchange of information. The State of Oregon has chosen not to participate in the MOU. PGE has offered the use of their JIC facility and have agreed to communicate and coordinate with those organizations at the JIC. The State of Oregon has not agreed to communicate or coordinate with the organizations at the JIC. See our comments under Planning Standard G.

Summary. With the exception of the MOU on the coordination of emergency public information, the existing arrangements for requesting and effectively using assistance resources are adequate. The Region and the RAC find the absence of the executed MOU is a minor deficiency. See discussion under Planning Standard G - Public Education and Information.

C. Emergency Classification System (Planning Standard D):

The States of Oregon and Washington, Cowlitz County, and PGE have adopted a consistent and compatible emergency classification system with appropriate emergency action levels.

Summary. All parties have adopted a consistent and compatible emergency classification system as called for by Planning Standard D of NUREG-0654/FEMA-REP-1, Rev-1.

D. Notification Measures (Planning Standard E):

1. Emergency Response Personnel. The States of Oregon and Washington, and Cowlitz County, have established procedures for the notification and mobilization of emergency personnel for all response organizations. These procedures are consistent with the exception of Unusual Event notification. Portland General Electric's and the State of Oregon's plans specify a 1-hour notification time for Unusual Event. The State of Washington's and Cowlitz County's plans specify 15-minute notification, which is called for by NUREG-0654/FEMA-REP-1, Rev. 1.

2. Alerting and Notification Use of Their Procedures.

a. In the approval exercise (3/04/81), the State of Washington, Cowlitz County, Washington, and Columbia County, Oregon, demonstrated the ability to alert, notify, and mobilize their emergency response personnel.

b. The monthly communication drills were implemented in April 1981.

c. In the approval exercise, the State of Washington, Cowlitz County, Washington, and Columbia County, Oregon, demonstrated that they could

staff their Emergency Operations Center (EOC) in a timely fashion. The State of Oregon did not demonstrate that they could staff their EOC in a timely fashion. In the following exercise (11/82) the State of Oregon demonstrated, to a limited degree, that they could staff their EOC in a timely fashion.

d. In the approval exercise, the State of Washington and Columbia County, Oregon, demonstrated an ability to use their resources (maps, status boards, message system, technical support, and logistical support).

e. In the subsystem exercise (called for by the critique of the approval exercise) the State of Oregon and Cowlitz County, Washington, demonstrated an ability to use their resources (maps, status boards, message system, technical support, and logistical support).

f. In the subsystem exercises, all organizations (States of Washington and Oregon; Columbia County, Oregon; and Cowlitz County, Washington) demonstrated that proper decision, based on recommendations from the Trojan EOF, could be made in a timely and coordinated fashion for the plume and ingestion EPZ's. In the following exercise (11/82), all organizations demonstrated that proper decisions, based upon recommendations from the Trojan EOF, could be made in a timely and coordinated fashion for the plume EPZ.

3. Alert and Notification System. The Portland General Electric Company has installed 186 sirens (Alert System) throughout the plume EPZ. The Region reviewed the design proposal. The Region witnessed the first test of the system on August 22, 1981. The test indicated a possible deficiency in coverage in one area, and in the operability of some of the equipment. The Region witnessed the second test of the system on September 25, 1982. The test indicated differences in coverage and the fact that the 95% operability factor was not met. Actions have been taken by PGE to correct the operability of the equipment. The differences in coverage will be revised at the next annual test. Actions have been taken by PGE to correct the operability of the equipment. The possible deficiency in coverage will be reviewed at the next annual test. The physical means of activating the notification system are in place and operational. Its use was observed during the test of the system and was found to be quite satisfactory with respect to remote activation and broadcast, television cable interrupt, and public awareness. Appropriate administrative means have been established for the activation and operation of the Alert System.

Summary. The Region's and the RAC's position is that the State of Oregon and PGE plans/procedures should be changed to be consistent with Appendix 1 of NUREG-0654/FEMA-REP-1, Rev-1. This to be a minor deficiency. Only NRC can resolve the issue by ordering PGE to change their procedures.

The Region and the RAC find that the Alert and Notification System is adequate and meets the intent of Planning Standard E and Appendix 3 of NUREG-0654/FEMA-REP-1, Rev-1.

The Region and the RAC find that the EOC procedures are adequate for operation for the States of Washington and Oregon; Columbia County, Oregon; and Cowlitz County, Washington.

E. Emergency Communications (Planning Standard F):

1. Systems. Compatible primary and backup communication systems exist between and among PGE's Emergency Operating Facilities (TSC, Near-Site EOF, Control Room, and Company Support) and the Emergency Operating Centers of the States of Oregon and Washington; and the counties of Columbia, Oregon, and Cowlitz, Washington.

2. Plans/Procedures. The various procedures call for prompt and continued communications among and between the principal response organization.

3. Drills. The communications' drill program was implemented in April 1981.

Summary. The Region and the RAC find that adequate provisions and capabilities exist for prompt communications among the principal response organizations.

F. Public Education and Information (Planning Standard G):

1. Education. The various plans contain commitments for an annual mailing to all residents within the plume EPZ. The first mailing was in December 1980, the second was made in January 1982, and the third in January 1983. Various public meetings have been held to enhance the public's awareness.

a. The Region reviewed and commented upon the revised brochure (distribution January 1982). The revised brochure now contains sufficient information on the types of radiation.

b. Cowlitz County, Washington, and Columbia County, Oregon, have maintained distribution of the revised public education brochure to those locations where the transient adult population visits.

2. Information. The Region and the RAC have recommended establishment and execution of an MOU among the States of Oregon and Washington; Columbia County, Oregon; Cowlitz County, Washington; Portland General Electric; NRC; and FEMA with respect to the coordination and exchange of emergency public information and the establishment of a JIC.

a. In the approval exercise (March 4, 1981), the RAC found that PGE; States of Oregon and Washington; and Columbia and Cowlitz Counties did not demonstrate that they could coordinate the release of information to the media. The RAC's critique called for several corrective measures, including a subsystem exercise for emergency public information.

b. In the subsystem exercise (November 19, 1981), the RAC found that the State of Oregon; Columbia County, Oregon; and PGE did demonstrate the ability to coordinate the release of information to the media. Cowlitz County, Washington, and the State of Washington did not adequately meet the exercise objective of public information and warning.

c. In the followup exercise (11/18/82), the RAC found that all organizations did demonstrate that they could coordinate the development and

release of emergency public information. Some specific corrective actions were recommended for the State of Washington. Columbia and Cowlitz Counties experienced difficulties in coordinating the release of emergency warning messages to the public. See our 1982 Trojan Exercise report, dated December 10, 1982.

d. The RAC's review of the plans for all organizations reveals some inconsistencies in approach to the release of emergency public information.

(1) There are three phases of emergency public information released during an emergency phase:

(a) From the utility and counties - initial warning and initial release to the media for the initial phase.

(b) From the utility, counties, and States - separate release points for followup warning and followup releases to the media for the intermediate phase.

(c) On behalf of utility, counties, States, and Federal agencies - a single release point for followup releases to media. Counties retain warning function to the media for the final phase.

(2) Obviously, during all three phases of operation, coordination, timely exchange of information, and rumor control are required.

(3) The plans and procedures are in agreement only for the first phase. During phase two, Oregon and PGE will operate from the Oregon EOC. The plan reads that the Oregon EOC is the official source of contact for the State of Oregon to the media. The operation of Cowlitz County, Washington, and the State of Washington, continues as in phase one (also official sources of contact for the media). During the third phase, establishment of a JIC, the location for releasing public information, will be transferred from the EOC's to the JIC. However, the Oregon and PGE plans place the establishment of the news center under operational control of the Governor of Oregon. The plans for Washington State, Cowlitz County, and Federal agencies assume automatic activation of the news center at the declaration of a Site-Area Emergency or General Emergency.

e. The State of Oregon has indicated that they do not want to be a signatory of the MOU or revise their current plans with respect to automatic activation of the JIC.

f. The State of Washington and Cowlitz County have become a signatory to the MOU. Their plans/procedures do not recognize the Oregon State EOC as the official control for activating the JIC.

Summary. The Region and the RAC find that the revised version of the public education brochure basically meets the intent of Planning Standard G.

The Region and the RAC find that the public education program for the adult permanent population is adequate.

The Region and the RAC find that the States of Washington and Oregon, Columbia County, Oregon, and Cowlitz County, Washington, have demonstrated adequate capability to coordinate emergency public information. Cowlitz and Columbia Counties have failed to adequately demonstrate the ability to coordinate the exchange of warning. The Region and the RAC find that this is a minor deficiency and corrective action has been promised.

The Region and the RAC find that the plans/procedures of the organizations do not adequately demonstrate that sufficient arrangements for timely exchange of information and coordinated arrangements for dealing with rumors have been made. The Region and the RAC find that this is a minor deficiency. There appears to be no resolution on the issues of disagreement; therefore, this deficiency will continue.

G. Emergency Facilities and Equipment (Planning Standard H):

The various organizations have identified facilities, equipment, and procedures. They are as follows:

1. Near-Site Emergency Operations Facility and State's/County's Emergency Operations Centers (EOC's).

a. The various physical locations have adequate space, security and press arrangements for emergency operations.

b. The communications include three dedicated voice circuits and one facsimile circuit with dedicated equipment. Other appropriate communication channels exist to allow for minimum backup and communication needs to other State/local government agencies, Federal agencies, media, and the general public.

2. Field Radiological Teams.

a. The two Oregon team field kits and the three Washington field team kits contain equipment that meets the requirements of NUREG-0654/FEMA-REP-1, Rev. 1, with respect to detection (10^{-7}uCi/cc) for ground survey and air sampling activities.

b. The States and PGE share a common radio frequency. The radios in each field team kit and the base radio station at the Near-Site Emergency Operation Facility are compatible.

c. The States have made arrangements for primary and backup aerial radiological monitoring capabilities. Appropriate ground/air communications have been established at the Near-Site Emergency Operation Facility.

3. Dose Assessment Area.

a. The States and Portland General Electric have established a dose assement area at the Near-Site Emergency Operation Facility for the receipt and analysis of all field monitoring data and the coordination of sample collection.

4. Joint Information Center.

a. The Portland General Electric Company has made the physical and financial arrangements for establishing a Joint Information Center based on NRC guidance provided in the fall of 1979.

b. Arrangements have been made to provide the dedicated voice circuit for public affairs and 24 other telephone lines at the Joint Information Center. Current plans call for these phones to be operative within 24 hours (NRC - Fall 1979 Guidance).

c. The plans of the Federal agencies (NRC and FEMA) and the State of Washington assume that this center will be operational within 6 hours of a declared Site-Area Emergency or General Emergency.

Summary. The Region and the RAC find that the organizations have made arrangements for adequate facilities and equipment to support the emergency response.

H. Accident Assessment (Planning Standard I):

1. Arrangements.

a. Radiological Assessment. The States of Oregon and Washington and PGE have agreed (via MOU) to incorporate their radiological health resources (equipment and personnel) for field monitoring assessment and protective action recommendations.

The organizations have adopted a common protective action guide. Provisions and procedures have been jointly developed for estimating integrated dose from the projected and actual release rates. They are contained in PGE procedures and referenced in the States' procedures.

b. Plant Status Assessment. The State of Oregon and the NRC have a MOU that allows the State to regulate various aspects of the operation of the Trojan Nuclear Power Plant. As part of their emergency response, the State is prepared to perform technical assessments of the plant status and onsite operations. Based upon this accident assessment function, the State is in a position to recommend protective actions. The State of Oregon has agreed to coordinate their assessment with other organizations and resulting recommendations for protective actions before protective decisions are made.

2. Capability for Accident Assessment.

a. Field Monitoring. The State's radiation control staff and field teams have demonstrated their ability to respond to and provide analysis of a simulated airborne release. These demonstrations have included the collection of samples (water, vegetation, and air), and the monitoring of simulated releases. The Region observed and evaluated these activities in the approval exercise (March 81) and two Health Physics Drills (October 1980 and November 1981). Corrective actions were implemented. The Region/RAC observed these activities in the September 16, 1982, Health Physics Drill and followup exercise on November 18, 1982. See our reports. These reports indicate that some revision of procedures and retraining on monitoring procedures and collection of samples is required in order to ensure adequate environmental sampling. The Region and the RAC find that these are minor deficiencies.

b. Dose Assessment and Protective Action Recommendation. The States' radiation control staff and PGE's radiological emergency staff have demonstrated their ability to translate radiological monitoring data into appropriate protective action recommendations for decisionmaking at the State/county EOC's for both the plume and ingestion emergency planning zones. See our Reports for 1981 Trojan Revisited dated December 10, 1981, and 1982 Trojan Exercise dated December 10, 1982.

Summary. The States of Oregon and Washington, and PGE, have developed adequate methods, plans, and procedures. They have adequate equipment to assess, monitor, and evaluate the potential offsite consequences of a radiological emergency condition.

The Region and the RAC find that accident assessment capabilities and procedures basically meet the intent of Planning Standard I.

I. Protective Response (Planning Standard J):

1. Protective Action Guides. A range of protective actions have been jointly developed by the staffs of the health agencies of Oregon and Washington, and PGE, for the plume and ingestion EPZ's. These guidelines are consistent with Federal guidance and are incorporated in their plans and implementing procedures.

2. Evacuation Planning. A detailed evacuation plan was developed by PGE and adopted by the State of Oregon and Cowlitz County, Washington (the appropriate decision authorities). The Region has found the evacuation plan to be in compliance with Appendix 4 of NUREG-0654/FEMA-REP-1, Rev. 1. Appropriate implementing procedures have been incorporated into the respective plans/procedures of Cowlitz County, Washington; Columbia County, Oregon; and the States of Oregon and Washington.

3. Procedures for Implementing Protective Actions. Protective action procedure has been developed by Oregon, Washington, and PGE for the plume and ingestion EPZ's. This procedure will also be used by PGE's Technical Support Center (TSC) for making early protective action recommendations until the EOF dose assessment area is operational. In addition, the State/county EOC's may use the procedure for making decisions to protect the public.

4. Ingestion Pathway Preparedness. The various agricultural enterprises and food producers within the ingestion EPZ have been identified. Common procedures for both States have been developed for sampling and for implementing protective measures. The implementing procedures contain appropriate maps and a basic inventory of agricultural enterprises, food producers, potable water supplies, and key crop information.

5. Capabilities for Implementing Protective Action.

a. The States and counties did demonstrate an ability to coordinate protective action decisionmaking for the plume and ingestion EPZ's.

b. The counties did demonstrate an ability to implement their procedures for access controls.

See our Reports: 1981 Interim (3/4/81); Revisited (12/10/81); and Trojan Exercise (12/10/82).

Summary. The States and counties have developed an adequate range of protective actions for the plume and ingestion EPZ's. The State, counties, and licensee have demonstrated an adequate protective action capability to recommend, decide, and coordinate decisions for protective actions and to implement protective measures.

J. Radiological Exposure Control (Planning Standard K):

1. The State Health Departments have made provisions to determine the dose of emergency workers involved in any nuclear accident.

2. The State of Oregon has prepared and distributed emergency worker kits that contain appropriate dosimetry (self-reading and permanent record devices) and KI.

3. The State of Washington has prepared and distributed emergency worker kits that contain appropriate dosimetry (self-reading and permanent record devices) and KI.

Summary. Both States have established and developed the capability for controlling radiation exposure. No deficiency exists.

K. Medical: Public Health Support (Planning Standard L):

The States/local governments have made arrangements for local and backup hospital and medical services. The plans/procedures contain lists of the available hospitals and other medical facilities within the State.

Summary. The States, counties, and licensee have made adequate arrangements for medical services for contaminated and injured individuals.

L. Recovery and Reentry (Planning Standard M):

1. The States and Cowlitz County have included in their general plans specific means for initiating recovery actions, relaxing protective measures, and establishing recovery organization/operation.

2. In the approval exercise the State of Washington and Cowlitz County followed their plan and met to establish procedures for reentry/recovery. The State of Oregon failed to develop recovery recommendations, but they did concur with the State of Washington on the decisions with respect to reentry and appropriate recovery measures.

3. In the subsystem exercise conducted on November 19, 1981, the various participants executed their plans/procedures with respect to the recovery/reentry process. Despite some confusion in the Washington EOC, there was concurrence and coordination with respect to the recommendations developed by the State of Oregon.

4. In the approval exercise (3/4/81) and the Health Physics Drill and EOF subsystem exercise (11/17/81), neither the State's field teams nor Dose Assessment Area adequately demonstrated an ability to make reentry recommendations. See our Interim Report (3/4/81) and 1981 Trojan Revisited Report (12/10/81).

5. An appropriate procedure for Recovery and Reentry including the Ingestion Pathways Monitoring/Sampling Plan has been developed and incorporated in PGE's procedures. The State of Oregon has adopted the procedure. The State of Washington, with some minor reservations, will adopt the procedure by March 31, 1983.

Summary. The States and counties and PGE have developed adequate plans for recovery and reentry. The Region and the RAC find that the implementing procedures are adequate and that insufficient capabilities were demonstrated by the field team and Dose Assessment Area. The Region and the RAC find that these deficiencies are minor.

M. Exercise and Drills (Planning Standard N):

1. The States and Cowlitz County have made commitments in their plans to establish and maintain the schedule of various drills and exercises which are required by the NRC/FEMA regulations. Their plans contain commitments for evaluation and formal critique, and for implementing corrective actions recommended in the critique.

2. Drills and exercises are being conducted in accordance with the schedule of Planning Standard N.

Summary. The Region and the RAC find that the States and Cowlitz County have implemented a preparedness program which consists of periodic exercises to evaluate major portions of emergency response capabilities; and periodic drills to develop and maintain key skills. Deficiencies identified as a result of drills and exercises have been corrected in a timely fashion.

N. Radiological Emergency Response Training (Planning Standard O):

1. The plans for States and Cowlitz County contain commitments to provide initial and annual retraining of all individuals assigned a role in their emergency response plans.

2. Formal Training.

a. Members of the planning staffs for both States and local governments have attended the FEMA-sponsored training course in planning.

b. All the members of the Oregon State Health Division and over two-thirds of the Washington State Department of Social and Health Services, who have a field team assignment, have attended the FEMA-sponsored emergency response course.

c. States and some PGE staff, having an assignment to the accident assessment function, attended the FEMA-sponsored accident assessment course.

3. On-the-Job Training.

a. Members of both States and local governments have received initial and followup training in their emergency response assignments and plans/procedures.

b. Most of the State of Washington's Public Affairs Officers (23) have attended a 1-day seminar in emergency public information which was arranged and coordinated by the Region.

Summary. The States, counties, and licensee have provided training to those persons who may be called on to assist in an emergency.

O. Planning Effort (Planning Standard P):

1. The States and Cowlitz County have assigned responsibility for plan development, annual reviews, revision, and distribution/update to appropriate officials within the various departments and agencies.

2. The States and Cowlitz County, Washington, have made commitments to frequently update the various telephone numbers in their implementing procedures.

Summary. The Region and the RAC find that the States, counties, and licensee have trained their planners; assigned responsibility for development and revision of plans/procedures; and have provided for the distribution of emergency plans/procedures.

III. Schedule of Corrections

There are specific deficiencies noted in Section II (Evaluation). It is the opinion of the Region and the RAC that none of these are major deficiencies, and that all, with one exception, will be corrected by either the next annual exercise (November 1983) or the next update of plans/procedures.