



FEDERAL EMERGENCY MANAGEMENT AGENCY

Washington D.C. 20472

June 3, 1981

MEMORANDUM FOR: Brian Grimes
U.S. Nuclear Regulatory Commission

FROM: John E. Dickey *John E. Dickey*
Director, Radiological Emergency
Preparedness Division

SUBJECT: Interim Findings and Determination Relating to the
Status of State and Local Emergency Preparedness for the
San Onofre Nuclear Generation Station (Units 2 and 3)

This responds to your March 4 and March 10, 1981 requests for the above information. No formal submission of radiological emergency preparedness (REP) plans by the State of California has been made to our FEMA Region in accordance with FEMA proposed Rule 44 CFR 350.7. The State's "Nuclear Power Plant Emergency Response Plan", in effect since 1975, has gone through a number of revisions. The 1978 version received NRC concurrence in August 1978. The latest draft revision was submitted in early 1981. As it stands, it is basically an administrative document lacking operational level detail and annexes addressing what support will be provided and how it will be implemented. Annexes are forecast to be drafted by August 1981.

RAC review comments on the latest drafts were furnished to the State on April 28, 1981. They consider the staff Plan, based upon the NUREG-0654/FEMA-REP-1, Revision 1, criteria to be about 40 per cent complete. Portions of local government plans are also incomplete. Deficiencies are notably SOPs and checklists. Finally, there is a significant need for more coordination among the State agencies and local governments to eliminate both duplication and inadequate interface in the plans.

A joint exercise was conducted on May 13, 1981, to evaluate the off-site capabilities of the State and local jurisdictions to respond to a nuclear emergency at the San Onofre station. The exercise reflected a general overall state of preparedness to implement general emergency plans. Significant shortfalls, however, were observed in the conduct of radiological emergency response operations. Further, the critical areas of ingestion pathway sampling and analysis, as well as reentry and recovery operations were not observed due to the restricted nature of the scenario. Communications, EOC operations, and general coordination were also considered to be weak and need further addressing through training and drill efforts. ~~Additional detail is contained in the attached RAC Exercise Summary.~~

NOTE: PFWT INK CHANGES PER H. GRUT, FEMA - 6/4/81

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A public meeting was held on May 18, 1981, in San Clemente. The meeting was attended by some 90 persons. Each jurisdiction was represented and reviewed its plan. The public was then given ample opportunity for the expression of their concerns. One area addressed was the ability to evacuate the population around San Onofre under normal circumstances, as well as under abnormal conditions, such as an earthquake or other impediment. The "single egress" issue of local roads near San Onofre and the City of San Clemente also was a point of concern. A number of opponents to plant operations were heard.

FEMA Region IX, in response to your March 4, 1981 letter, has reassessed the issue of effects of an earthquake on emergency operations in coordination with the California Office of Emergency Services and with RAC members. While current plans reflect no direct assessment of earthquake issues, all planning considered the ramifications of such events and it is considered that a general capability exists to respond through basic emergency planning to what is currently considered to be the most likely and frequent levels of seismic activity. A catastrophic earthquake notwithstanding (which would likely nullify the significance of a nuclear emergency), the off-site jurisdictions reflect a level of preparedness through existent basic planning to minimally respond to the potential seismic problem. Alternate emergency operating centers are identified and backup communications, frequently radio as opposed to land-line or wire, are present or identified or are forecast to be entered into the response capability/planning in the near future.

In summary, our interim finding is that State and local government radiological emergency response plans are minimally adequate. However, until corrective actions have been taken, the off-site capability for implementation of the plans is not considered adequate. Additional details with respect to the plans and the capabilities of State and local governments to implement them are contained in the attached FEMA Region IX Evaluation.

Attachment
as stated

FEMA REGION IX EVALUATION
WITH RESPECT TO THE
ADEQUACY OF PLANS AND THE CAPABILITIES
OF STATE AND LOCAL GOVERNMENTS TO IMPLEMENT THE PLANS

I INTRODUCTION

As cited in 44 CFR 350.3d, (proposed) "FEMA has entered into a memorandum of understanding (MOU) with the NRC to which it will furnish assessments, findings, and determinations as to whether State and local emergency plans and preparedness are adequate and continue to be capable of implementation." Pursuant to a request for such findings, as identified in a March 4, 1981 memorandum from Brian Grimes (NRC) to John Dickey (FEMA) regarding FEMA support for Nuclear Regulatory Commission (NRC) licensing of San Onofre NGS, Units 2 & 3 (SONGS), FEMA Region IX has prepared its findings and determinations. Those determinations are based upon an assessment period concluding as of May 22, 1981, and reflects an interim evaluation on the state of offsite preparedness as opposed to the "formal" FEMA findings identified within 44 CFR 350 and are the "alternative" requested in the aforementioned March 4 letter. These preliminary findings reflect and acknowledge a developmental state of preparedness of all jurisdictions.

II GENERAL COMMENT

Our findings are based upon four areas of study, addressed in subsequent pages, that have developed as a result of FEMA Region IX's involvement with SONGS and its surrounding environs in the last year and one-half. In all cases, reviews have confirmed each other to provide a general perception regarding the level of preparedness.

The FEMA Region IX Regional Assistance Committee (RAC) conducted a preliminary informal review of offsite jurisdictional plans, and published said review on April 27, 1981. This review reflected a need for additional planning by all jurisdictions, including standing operating procedures (SOP's) and/or checklists, and a necessity to clarify a number of concerns identified by the RAC. Significant among those concerns was the need for consolidation of planning and general coordination of efforts by all jurisdictions to reduce redundancy and facilitate improved emergency response. Further, the absence of dedicated radiological training and drills left a major concern with the RAC as to the jurisdictions' ability to respond to the requirements of an offsite emergency. Incident to this was dose assessment, control of field monitoring teams, and communication amongst all involved parties. Additionally, the RAC elicited concern over the limited evacuation capability, especially where unusual circumstances might enter into the scenario.

The State of California Office of Emergency Services (OES) Nuclear Power Plant Emergency Response Plan, in effect since 1975, has gone through a number of revisions; the latest in early 1981, but is considered to be an administrative document lacking operational level detail and annexes addressing what support will be provided and how it will be implemented. The 1978 version received NRC concurrence in August 1978 based on original criteria. The FEMA Region IX RAC reviewed the plan in March 1981 against the new criteria. Annexes are forecast to be generated in draft in July or August of 1981, while no date for final edition dissemination has been identified.

As such, the FEMA Region IX RAC review of the current State plan has been conducted and subsequent review of the balance is anticipated to be accomplished in the last quarter of this fiscal year. The State plan is considered to be about 40% complete at this time.

On May 13, 1981, FEMA Region IX, with support from FEMA Headquarters, Regions VIII and X, and the RAC conducted an evaluation of the offsite capabilities of the local, and State, jurisdictions to respond to a nuclear emergency at SONGS.

The evaluation preparation, conduct, and subsequent critique process, closely followed guidance provided by FEMA National program office. The findings of that evaluation reflected a general overall preparedness to implement their plans and to respond to the scenario from an operational standpoint, but significant shortfalls were observed in the ability to conduct radiological response operations. Further, the critical areas of ingestion pathway sampling and analysis, as well as Reentry and Recovery operations were not observed due to the restricted nature of the scenario. Communications, EOF facility, and general coordination were also considered to be weak and need further address through training and drill efforts. The evacuation portion of the exercise was considered adequate but was felt it did not totally test the evacuation requirement, and therefore, reflected a need for further study, drill, and exercise.

Subsequent to the evaluation of the May 13, 1981, exercise, FEMA conducted a public meeting, again in general accord with 44 CFR 350 criteria, on May 18, 1981, in San Clemente, California. The meeting was attended by some 90 persons. Each jurisdiction was represented and reviewed its plans. Following that, the public was given the opportunity to submit its comments in written or verbal form to FEMA Region IX. The meeting was recorded by an official stenographer whose record is a part of their findings. Sufficient time was made available so that all attendees had an opportunity to input comment.

General concern was registered during the meeting regarding the ability to evacuate the population around San Onofre, under normal circumstances, and under conditions of abnormal events such as earthquake or other impediment. The "single egress" issue of local roads near San Onofre and the city of San Clemente also was a point of concern. Comments were also received relating to the lack of training by response personnel related to SONGS oriented events. A number of opponents to plant operations were heard. In response to the request in the March 4, 1981, letter regarding FEMA review of the effects of an earthquake on emergency operations, Region IX reassessed the issue through

coordination with the California OES, and with RAC members. While current plans reflect no direct assessment of earthquake issues, all planning considered the ramifications of such events and it was perceived that a general capability exists to respond through basic emergency planning to what is currently considered to be the most likely and frequent levels of seismic activity. A catastrophic earthquake notwithstanding (which would likely nullify the significance of a nuclear emergency), the offsite jurisdictions reflect a level of preparedness through existent basic planning to minimally respond to the potential seismic problem. Alternate Emergency Operating Centers (EOC's) are identified and backup communications, frequently radio as opposed to land-line or wire, are present or identified or are forecast to be entered into the response capability/planning in the near future. Further planning is needed to reflect detailed alternative response operations and the need for review and revision of concepts continues to be a requirement to assure a dynamic planning status.

FEMA Region IX is currently working with State and local jurisdictions to develop further planning in this area. Essentially, local jurisdictions should be able to provide the utility with post-disaster damage assessment information, keep communications to the site operable, and establish an alternate EOC, thus allowing plant operations or recovery at the earliest opportunity. Jurisdictions should establish earthquake plans and cross reference same within revisions to their Radiological Emergency Preparedness plans.

III SUMMARY

Development of findings and determinations on the adequacy of offsite emergency response also requires address of the specific criteria cited in 44 CFR 350.5. The following comments reflect reference to those criteria.

Responsibility for emergency response by the licensee, State, and local jurisdictions has been assigned and support organizations have been specifically established. There remains a need to clarify monitoring and assessment duties for both plume and ingestion pathways as they pertain to State OES, State Radiological Health (SRH), and local jurisdictions. Some conflict in plan responsibilities still exists. Modification of local jurisdiction plans will be necessary if SRH implements their draft procedures. This issue remains a major concern and could be an impediment to a total response capability. It is recommended that a joint standardized multi-jurisdictional response team be developed to meet the requirement identified.

Not all response organizations have sufficient personnel resources to handle the total response requirement. Small cities such as San Juan Capistrano rely on County support, yet retain the authority to make decisions for city inhabitants. Coordination of planning and a consolidated cooperative approach to the problem could alleviate much of the difficulty regarding response.

The coordination necessary for request and use of support resources has been established and has existed through the California Mutual Aid Agreement for some years. Accommodations at the EOF for State and local staff and associated support personnel, while having been identified in plans, have not been demonstrated to exist or be satisfactory. Serious concern exists regarding the interim EOF operation including lack of clear operating procedures, fragmentation of the facility, lack of management direction communications, size of the facility, and the significant impedance to the San Clemente EOC operation. The operation of the Offsite Dose Assessment Center (ODAC), jointly agreed upon by the local jurisdictions, has also not been clearly defined regarding support by the Utility. The fragmented nature of the EOF has split Utility dose assessment (at the Technical Support Center (TSC) and the offsite effort (at the offsite EOF). This clearly impedes joint decision making and slows the process of protective action implementation. The system of fragmented field monitoring teams operating through EOC's rather than a joint monitoring capability directed by a Unified Dose Assessment Center (at the EOF) also limits total response. Actions are anticipated to correct this impedance, but until they occur and are tested, this issue remains a major concern and an impediment to a total response capability. The development of an EOF of a permanent nature, capable of meeting Utility, NRC, and local jurisdictional requirements is essential to the resolution of this problem. In the interim, the EOF should be relocated to a single location separate from the San Clemente EOC (at least in another room of the building), and staffed with management, communicators, and other support personnel necessary for EOF operations. The onsite EOF should be moved to the offsite EOF and procedures written for its operation.

A standard emergency classification and action level scheme has been developed and is jointly supported in all jurisdictional plans. Off-site response measures rely upon information provided by the facility licensee. While the timeliness and degree of detail of this information was a concern of exercise evaluators the current procedures do not offer an impedance to the total response capability.

Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel. These systems are existent and have been tested including review of content of initial and follow-up messages. Communications to State OES could be improved regarding clarity and timeliness. Means to provide early notification and clear instructions to the public within the plume exposure pathway emergency planning zone (EPZ) have not totally been installed or tested. Until this is completed and tested, it clearly is a major concern and an impediment to the total response capability. Key to this is siren installation and warning dissemination capability to remote areas where public address systems from surface or airborne vehicles is required.

Adherence to critical timeframes for notification must be tested to assure a capability.

Provisions exist for prompt communications among principal response organizations, emergency personnel, and through the media to the public. Further installation, testing, and exercise of additional communications equipment is recommended to alleviate difficulty in passing critical information during a crisis. Evaluation of exercise events reflected recommendations for at least two additional "hot" lines amongst jurisdictions and the EOF for handling of essential communications. Message dissemination to the public through the Emergency Broadcast System (EBS) network requires further testing through drills and exercises to assure operational capability. It is not felt, however, that these requirements constitute an impediment to the total response capability if they are acted upon in the near future.

The Southern California Edison Company (SCE), primary owner/operator of the San Onofre Nuclear Generating Station (SONGS) has not clearly demonstrated that information has been made available to the public on a periodic basis on how they would be notified and what their initial actions should be in an emergency. While SCE has reflected draft materials are being prepared, there is no appearance of an active concern for timely development of this material to meet the timeframe of this report. The Utility has identified a News Media Center for coordination of output of information to the media and its initial evaluation reflected generally satisfactory operation. However, further development of training of Public Information Officers (PIO's) and local media personnel, as well as supportive media information materials, is considered needed. Procedures for coordinated dissemination of information to the public is felt to be satisfactory, yet should be continually monitored to assure credibility of releases and standardization of terminology. With primary emphasis on the issue of advance public information dissemination, sufficient concern exists such that this area remains a major issue and an impedance to the total response capability. If the public is not intimately familiar with protective action procedures, it is considered they are not provided adequate protection from the hazard.

Adequate emergency facilities and equipment to support the emergency response have not been provided. The Utility reportedly has promised response equipment to one or more of the local jurisdictions. Delivery of that equipment is not complete. Further, sirens reportedly have not been completely installed in all areas. The interim EOF in its fragmented character, was of great concern to evaluators and players alike. No alternate interim EOF has been identified. Additional recommendations have been made for the Utility to provide telephones and other equipment to meet perceived needs as a result of the exercise. Until these items are incorporated into the response capability, they are considered a major concern and an impedance to the total response capability.

The assessment and monitoring of actual or potential offsite consequences of a radiological emergency condition through methods, systems, and equipment is considered to be weak and in need of improvement to meet minimum criteria. A number of jurisdictions reflected a lack of both equipment and capability to conduct monitoring. No ingestion pathway sampling was observed during the exercise due to omission from the scenario and a lack of capability throughout the jurisdictions. Teams need extensive radiological training. A multijurisdictional response capability needs to be developed to assure adequate coverage of plume pathway and to standardize procedures and allow flexibility in response. Air sampling equipment is generally not available. These issues form one of the most critical concerns and are a significant impediment to a total response capability.

A range of protective actions has been developed for the plume exposure pathway EPZ for both emergency workers and the public. Guidelines for the choice of protective actions during an emergency are developed and in place. Protective actions for the ingestion exposure pathway EPZ, appropriate to the locale, are generally developed. Further development and testing of these guidelines is recommended, but do not impose an impediment to the total response capability.

Means for controlling radiological exposures in an emergency are established for workers and are consistent with Environmental Protection Agency protective action guides (EPA PAG's).

Arrangements have been made by the Utility for medical services for contaminated injured individuals. Further effort is necessary to test the response capability of the hospitals providing this support to assure agreement to receive multiple casualty cases. This does not, however, appear to pose an impedance to the total response capability.

Plans for recovery and reentry have been only superficially developed and further effort to develop detailed planning is recommended. No evaluation of this subject area has been conducted. This is not considered to be a serious impedance to the emergency response capability due to its post-event nature and the difficulty in defining specific planning parameters with which to develop procedures.

With the exception of the May 13, 1981, exercise evaluated by FEMA Region IX, there have been almost no other drills, exercises, or related actions as defined in NUREG 0654/FEMA REP-1. This situation is probably the single most significant influence on the status of plans, procedures, ability to respond, and reason for the major concerns identified herein. If future drills and exercises are conducted and the requirements of NUREG 0654/FEMA REP-1 are adhered to, there should be no impedance to the total response capability.

Radiological emergency response training has essentially not been provided to those who may be called upon to assist in an emergency. The Utility has not initiated any identifiable training program to cover areas of radiological monitoring, dose assessment, or general radiological training so as to offer a wide selection of courses to

meet current requirements. The exception has been a Radiological Monitoring Course offered for medical training through its availability was not well advertised or coordinated. This issue is of major concern and without its immediate resolution offers a significant impedence to the total response capability. In conjunction with the State of California OES, the Utility should immediately take action to develop the necessary training to meet the identified needs in the local jurisdictions.

Responsibility for plan development and review and distribution of emergency plans have been established and generally, planners are properly trained and procedures followed. Further review and revision to plans is required as a result of the FEMA/ RAC plan review dated April 27, 1981. Consolidation of some plans has been recommended to improve response capability and standardize response. SOP's should be completed for all operational functions and forwarded to FEMA Region IX for review. Despite the lack of indepth SOP's and operational material required of the State Nuclear Power Plant Plan, this issue is not considered a significant impedence to the emergency response capability assuming reviews and revisions are developed as reflected in tasking documents.

IV CONCLUSION

The results of the various reviews and analysis conducted by FEMA Region IX and its supporting organizations has reflected an attempt to comply with the standards and directives placed upon the Utility and the jurisdictions involved. The conclusion reached is that there has been insufficient time, training, drill, and exercise to reflect the required ability of offsite organizations to protect the public health and safety. Alternatively, the efforts rendered, coupled with an aggressive thorough approach to training and preparation (equipment, SOP's, etc.) generated as a result of these findings or related incentives, would create the necessary capability within the very near future. It should be noted that all reviews have reflected this posture and were it not for the somewhat unrealistic time-frame of events, the capability to meet crisis conditions might well have evolved within a very limited timeframe. There should not be allowed, however, a reduction of the significance of the review and evaluation process, but a continued emphasis on assurance through evaluation that the capability is reached and will continue to be present to provide a total response capability.

Resultantly, the findings and determinations as to the adequacy of State and local jurisdiction emergency plans are that they are only minimally adequate to meet the requirements of the situation. The capability for implementation of those plans is not considered sufficient to protect the public until the aforementioned corrective actions are taken and confirmed through subsequent evaluation and analysis.

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ENCLOSURE - Exercise Summary, San Onofre, May 13, 1981

EXERCISE SUMMARY
SAN ONOFRE
MAY 13, 1981

Pursuant to tasking identified in FEMA directives and related letters, FEMA Region IX and the Regional Assistance Committee (RAC) began preparation in early March 1981 to evaluate the exercise, eventually scheduled for May 13, 1981, at the San Onofre Nuclear Generating Station (SONGS). The exercise included offsite jurisdictional play in varying degrees but all jurisdictions were to play at least to a limited degree. The State of California Office of Emergency Services and Radiological Health also participated as did CALTRANS and some units of the California Highway Patrol. The Nuclear Regulatory Commission (NRC), Region V, evaluated onsite utility actions of Southern California Edison Company (SCE), the SONGS' principal owner. FEMA Region IX and support staff from other agencies evaluated State and local jurisdictional play.

Following the exercise, an assessment of the exercise events was made by the 45 person evaluation team and a general finding determined within 24 hours (in accordance with FEMA Guidance Memorandum #17) through a pyramidal critique process. An informal debriefing was scheduled for Thursday, May 14, at 4 p.m., to provide cursory critique input to the jurisdictions that played. Subsequent preparation of final findings for the record have been prepared and are the content of this document.

Team member activities and requirements were identified in an evaluator's packet. Advance briefings and reviews of plans were conducted, as well as an evaluation team briefing the afternoon before the exercise (May 12). An evaluation team coordinator (Team Chief) served as an advance party to receive team members and provide coordination in advance of formal initiation activities on the day prior to the exercise.

The scenario was specifically site-oriented and was limited to an initiating event and cue cards for field radiation readings by field team members. All offsite jurisdictional play was as a result of message traffic from the Utility. The following generally summarizes the FEMA Evaluation Team findings. It was developed through a consolidation process following the exercise and represents general comments relating to key findings. The observations and resultant findings were based upon three primary factors: adherence and execution of present planning; demonstration of the ability to protect public health and safety; and application of basic planning criteria identified in NUREG 0654/FEMA REP-1.

We were impressed with the tremendous effort made on the part of all jurisdictions to respond to this exercise and the extremely short preparation time involved regarding response procedures and staff. Our findings reflect that understanding and are presented as suggested recommendations which are to be incorporated into subsequent planning, training, and drill or exercise activities.

Overall, every jurisdiction demonstrated an active, dynamic, and enthusiastic effort during the exercise. General disaster response procedures and participant play were found to be very good and demonstrated a good capability to handle all play related to the exercise. The specific areas dealing with radiological issues, however, reflected some areas of concern and a need for further training and drills. The following reflects some of the specific items of concern:

1. There appeared to be no preparation or limited address of public information or Emergency Broadcast System (EBS) releases to emergency information following activation of sirens. Materials were in one instance released to the media/EBS 20 minutes after simulated sounding of the alert siren creating a potential for confusion on the part of the general public who would not receive immediate follow-up information from their radios.
2. With the exception of Orange County, evaluators did not observe any implementation of rumor control systems. Orange County had a system of ten phones established but the information release did not specifically reflect a "for exercise release only" caption until identified by an evaluator.
3. There was a perception of a lack of telephone or communications discipline in all observed areas. Telephones identified for specific use such as, for coordination or radiological information relay were used without regard to planning and were not staffed by an "identified" or dedicated communicator with "message" dissemination to internal staff members.
4. There was a general observation that meteorological data and sources such as, National Weather Service (NWS), were not used effectively. Weather status boards were not maintained, where established in EOC's.
5. With the exception of the San Clemente Team, radiological field team procedures and application were found to require further training and standardization. Understanding and application of basic Radiological Defense (RADEF) principles were not considered to be sufficient to provide the type of monitoring necessary for dose assessment and resultant decision making required of Radiological Emergency Preparedness (REP). Teams were found to have faulty, out of inspection, or non-operating equipment in a number of cases. Reporting procedures were varied and in some cases communications posed problems.
6. No ingestion pathway sampling and no laboratory analytical capability were observed due to omission from the scenario.
7. Limited coordination between jurisdictions regarding decisions made by each EOC was observed. Totally effective use of the dedicated telephone was hindered in some cases due to the lack of speaker-phone capability at EOC's. Use was not limited to critical functions such as, dose assessment and decision making issues. Further procedural definition, including written Standing Operating Procedures (SOP's) was observed to be needed.

8. There was no demonstration of a flexible monitoring response capability to plume tracking through use of sector and zone designators as depicted in Table J-1 of NUREG 0654/FEMA REP-1 or some similar alternative. Additionally, no cooperative interjurisdictional monitoring team response capability was observed limiting available teams and standardized procedures.

9. A number of operational level team activities lacked SOP's or checklists that would have assisted in team response and standardized actions where, for example, personnel turnover (shift changes) might occur and limit team proficiency.

10. Traffic control/highway access was hampered by an apparent lack of coordination between counties. Procedures differed as to initiation of roadblocks and traffic evacuation. Procedures were not followed according to planning or exercise guidelines as determined by controllers.

A number, if not all, of the concerns generally identified here are felt to be correctable through training and future drill and exercise. The present and ongoing coordination and development of planning criteria on San Onofre will, we believe, reflect corrective actions that will resolve a number of the identified concerns.

The evaluation conclusion was that the jurisdictions and the Utility have to establish further plan review, training, and drill efforts to correct current shortfalls in radiological coordination and communications areas. Further drills and exercises evaluated by FEMA are recommended to assure a level of protection in the best interests of public health and safety.