

LESSONS LEARNED

FROM THE RECENT (1998) FOREIGN SPENT FUEL SHIPMENT THROUGH THE CONCORD NAVAL WEAPONS STATION

A Summary of Comments from California State Agencies and Local Jurisdictions

FEBRUARY 11, 1999

INTRODUCTION

Background

The federal Department of Energy plans to make approximately 4-5 shipments of spent nuclear fuel from foreign research reactors through California through the Year 2009. These shipments are part of a US non-proliferation program to recover US-origin spent nuclear fuel from foreign reactors to prevent their possible use internationally in making nuclear weapons. The first of these shipments through the Concord Naval Weapons Station occurred on July 21-23, 1998. The next shipment is expected to occur in the Year 2002.

The preparation for this shipment involved an extensive cooperative effort involving federal, regional, state (four states), Indian tribes, and local jurisdictions along primary and secondary routes to address transport safety issues and develop a transport safety program. A list is attached of California and federal agencies as well as other organizations involved in preparing for this shipment (Attachment 1).

Following the shipment, the State of California Foreign Spent Nuclear Fuel Transport Working Group (State Working Group) met August 11, 1998, to discuss "lessons learned" from the first shipment. This Working Group includes senior technical staff from eight state agencies who helped develop transport safety, security, and public communication plans as well as emergency response preparation for these shipments. The State agencies represented on the State Working Group are the Energy Commission (coordinator of the Working Group), Caltrans, Emergency Services, Environmental Protection Agency, Fish and Game, Health Services, Highway Patrol, and the Public Utilities Commission. These agency representatives worked with the Department of Energy (Idaho, Oakland and Headquarters) and the Western Governors Association to develop and implement state and federal emergency response, public information and security plans for these shipments. As part of their evaluation of preparedness for the first shipment, the State Working Group responded to a questionnaire that was developed by Lockheed Martin Idaho, a contractor to DOE responsible for helping

to coordinate this first shipment (Attachment 2).

Energy Commission staff mailed out this survey to local emergency response and law enforcement supervisors/coordinators along the primary and secondary foreign spent fuel shipment routes in California. The questionnaire was completed by 18 local emergency response and law enforcement personnel representing 12 counties (San Francisco, Mann, Contra Costa, Solano, Yolo, Sacramento, Butte, Placer, Plumas, Yuba, Nevada, and San Joaquin) and three cities (Martinez, Davis and Sacramento). For consistency, the same questionnaire was used to obtain evaluations of preparedness from California agencies as well as local jurisdictions.

Purpose

The purpose of this report is to document and preserve the “lessons learned” from the first of these shipments of foreign spent fuel through the Concord Naval Weapons Station for future reference and possible use in other nuclear or hazardous materials transport planning efforts. The following summary of comments is limited to the views of representatives on the State Working Group and the local jurisdictions in California involved with the first shipment.

SURVEY RESULTS

Adequacy of Preparations

Without exception State and local agencies responding to the questionnaire concluded that preparations in their jurisdiction were adequate for the recent foreign spent fuel shipment.

Areas Needing Improvement

When asked what they would like to see done differently (planning, training, implementation, validation, transportation), the state agency representatives and local jurisdictions identified several issues and recommended improvements. They are summarized below:

1. Inaccessibility of Containers for Radiological Surveys Onboard Ship:

The marine vessel carrying the foreign research reactor spent nuclear fuel (FRRSNF) was to have been a dedicated shipment, with no other cargo. However, some fuel loading equipment accompanied the SNF shipment by sea. These other fuel loading containers adjacent to the FRRSNF ISO containers prevented access needed for onboard radiological surveys of the FRRSNF containers.

Recommendation: Adequate access to the foreign spent fuel containers should be

provided onboard the marine vessel and the containers should be positioned in the cargo hold so that they are accessible for radiological surveys.

2. Joint Information Center (JIC) Needs Improvement:

The objectives, roles and responsibilities of the Joint Information Center (JIG) changed during the shipment. There was disagreement over whether the county or DOE was in charge of JIC activities. At the deactivation of the JIC, the county's videotapes of news coverage and the logs of media calls were removed from the JIC without permission from the JIC coordinator.

There was disagreement on the nature of information to be given out to the public and who was in charge of the JIC. The county and DOE-Oakland worked separately rather than in coordination. The county noted that the JIG belongs to Contra Costa County and the local agency Emergency/Planned Event Organization as established by the Incident Action Plan, and that DOE was there to support that operation. DOE-Idaho was very helpful in acting as a liaison to resolve these problems and to allay further problems.

Recommendations: The objectives for and responsibilities of participants in the JIC (including who has the lead responsibility: the county or DOE) need to be clearly established and agreed upon prior to the next shipment. Jointly agreed upon arrangements for the custodial care of JIC materials (videotapes, phone logs, etc.) should be made prior to the operation of the JIG. These protocols should be clearly communicated to all participants in the JIC, including newcomers. The JIC staff needs to have clear, concise messages to convey to the media and public. The JIC should be operated around the clock. There should be an exercise (tabletop) with JIG personnel prior to the next shipment to clarify JIC roles and responsibilities.

3. Last-Minute Designation of Alternate Rail Route:

A change was made in a section of the alternate route from Stockton to Sacramento to avoid the 19^w Street corridor in Sacramento. This change was made within weeks of the shipment and resulted in problems for rail inspection activities. The railroad and the regulatory agencies require a 90-day window for making inspections.

Recommendation: The carrier and program planners need to be aware of this 90-day window before making any changes in routes. Once routes have been established, these routes to the extent possible should not be changed within 90 days of the shipment.

4. Lost Placard:

A placard was lost while the shipment was en route just prior to the shipment's entering the State of Nevada.

Recommendation: To prepare for any potential placard problems (e.g., lost placards), duct tape for reattaching placards as well as spare placards should accompany the shipment.

5. Radiological Surveys of Containers Lasted Too Long: Radiological surveys at the dock took longer than anticipated.

Recommendation: Ways of speeding up these surveys without compromising their thoroughness and accuracy should be considered.

6. Need for a Master Schedule:

A master schedule of DOE FRRSNF meetings is needed to avoid confusion about meeting dates and locations.

Recommendation: In view of the many agencies and people involved with planning meetings and exercises in California, a single point of contact (within DOE, within the State of California, and within affected counties) should be assigned the responsibility for maintaining and updating a master schedule.

7. Need to Clarify DOE's Reimbursement Commitments to Local Jurisdictions.

DOE promised funding to some counties to reimburse counties and cities for law enforcement training. In addition, new radiological monitoring equipment was promised to many local jurisdictions prior to the shipment. However, because of delays in receipt of the funding, DOE was not able to provide this funding to purchase new equipment in time for the first shipment. As a result loaner equipment was provided to the local jurisdictions. (The new radiological monitoring equipment, upon arrival, will be distributed to local Jurisdictions.)

DOE initially promised "no additional costs to local jurisdictions for law enforcement". DOE-Headquarters told local jurisdictions that law enforcement expenses resulting from the shipment would be reimbursed completely. However, DOE later stated that they would not reimburse local jurisdictions for training, materials and law emergency response equipment such as tear gas. At least three counties wanted DOE to reimburse counties/cities for the extra staff time used in training and exercises.

Recommendation: DOE needs to clarify reimbursement policies and resolve local funding issues prior to the next shipment. Local jurisdictions need a clearer

understanding of DOE's expectations of the counties' preparation for the shipment including which local expenses DOE would reimburse.

8. Need for a Single DOE Chain of Command:

There were simultaneous lines of communication from DOE-Headquarters, DOE-Idaho, and DOE-Oakland that were not always consistent.

Recommendation: DOE should establish a single chain of DOE communication regarding the shipment. DOE-Oakland should be more involved in decision-making for emergency preparedness activities.

9. Problem of Safeguarding Information that is Publicly Known:

Several counties noted the difficulty of safeguarding information that is widely known to the media and public.

Recommendation: The issue of safeguarding information that is already publicly known needs to be resolved prior to the next shipment. Problems of preliminary releases of safeguarded information to the media and public need to be resolved.

10. Non-working Cellular Phones:

Cellular phones did not work properly during certain portions of the rail route.

Recommendation: Communication problems need to be addressed and alternative systems, such as those available through the California Department of Fish and Game, should be evaluated and considered for possible use.

11. Future Shipment Training Needs:

City emergency response personnel requested training on any new procedures or updates on equipment.

Recommendation: Training on any changes or updates to the procedures or equipment should be provided to local jurisdictions prior to the next shipment.

12. Radio frequency Interference with Personal Dosimeters:

Some local jurisdictions had problems with the digital dosimeters loaned to them

from DOE. Some were sensitive to radio frequency interference that resulted in false readings. The readings from these dosimeters showed that the person wearing the dosimeter was receiving the maximum exposure, when this was not the case (the shipment had low readings.) This needs to be resolved, since, in the event that dosimeters~ are needed, individuals using them will likely be near other users of radios and cellular phones.

Recommendation: Before the next shipment, the problem of radio-frequency interference of dosimeters needs to be corrected. The dosimeters need to be radio-frequency resistant to prevent false readings.

13. Radiological Survey Equipment Promised to Local Jurisdictions

Local jurisdictions were promised new emergency response radiological monitoring instruments; however, due to delays in receipt of funding from DOE, instruments could not be ordered in time and new equipment was not provided to these local jurisdictions prior to the first shipment. Contra Costa County noted that the equipment provided to them was old loaner sets from the State OES and not the new equipment promised by DOE! OES. Contra Costa County would like new instruments, as promised by DOE, and a plan for calibrating and certifying these instruments. Sacramento County and San Joaquin County also noted the need for new equipment. San Joaquin County noted that their Joint Hazardous Materials Team was offered newer radiological monitoring equipment, which the Team accepted, but as of this date the monitoring equipment still has not arrived. Yolo County also said they have not yet received the instruments for the shipment. To make certain that the emergency responders had adequate surveying equipment, DOE-Idaho and State OES loaned them equipment. The City of Martinez Police Department noted that they did not receive law enforcement equipment as promised.

Recommendation: See No. 7 above. Adequate radiological monitoring equipment is key to appropriate emergency response. County equipment needs should be reassessed and resolved prior to the next shipment.

14. Public Announcements on Shipment:

The Martinez Police Department and Nevada County commented that there was too much information made public on the shipments. Martinez noted that DOE's release of information on the shipment placed hardships on other people and raised security issues. Solano County representatives noted the excessive news coverage of the shipment. Yolo County requested that DOE not advertise the shipment as it is coming through. However, San Francisco City and County considered the briefings of public officials and the public to be beneficial. They commented that information on the safety of the containers was very helpful to alleviate public concerns. Such information as far in advance as is practical was considered

necessary. Intense media coverage and interest in the shipments can be expected with each shipment.

Recommendation: The need for safeguarding information regarding the shipment should be foremost in developing a public communications program. Briefings of senior local officials on the next shipment should be coordinated through the State prior to the next shipment.

15. Recommended Changes to the Foreign Spent Fuel Transport Plan:

Contra Costa County recommended that transport and emergency response planning should include intelligence gathering and planning for the worst-case scenario, not activating for it. They recommended that employees could be put on standby instead of actually responding to the command center and operations centers. They considered the development of the Incident Action Plan to be a very beneficial tool, and should be done with each shipment. They further recommended that all agencies should follow the Incident Action Plan (IAP) to avoid any territorial issues (see JIG comments above). A health physicist with Contra Costa County recommended that the next shipment should occur within five years to avoid the anticipated large turnover of trained personnel prior to the next shipment. San Joaquin County personnel would like to meet the emergency response escorts for the shipment to understand their capabilities and their expectations from the local responders in the event of an accident.

Recommendation: The revised State transport plan should include planning for the worst-case scenario. The need for activating versus standby readiness of emergency responders and law enforcement should be evaluated prior to the next shipment. Refresher training needs should be identified and addressed to accommodate the turnover expected of emergency response personnel. County recommendations for improving the emergency response transportation plan need to be considered in State plan revisions.

Improving Notification/Communication

When asked if there were any suggestions for improving the notification/communication processes the following was noted:

1. Notification/Communications Went Well Overall

Contra Costa County thought the notification and communication processes went well as planned by the agencies involved. Mann County also noted that the method

used through the State OES was fine. Plumas County thought notifications went well. Solano County and Yolo County said they had no suggestions for improvement. The process was explained, tested, and implemented and worked well.

Recommendation: Contra Costa County recommended continuing to use the representatives of the agencies involved with the shipment notification/communication process for the first shipment. Nevada County recommended that counties adjacent to shipment counties should also be notified, since one county's problem is quickly felt by their neighbors.

2. Procedures for Advanced Shipment Notification Need Improvement
Procedures for advanced notification of the shipment via the Office of Emergency Services Warning Control Center were not always followed.

Recommendation: Official notification procedures, including the State of California notification procedures, should be followed. Notification of the shipment should come from a single source within DOE to avoid any misunderstandings.

3. Notification Procedures for the Secondary Route Need Improvement:

San Joaquin County noted problems with procedures for shipment notification and coordination of information for local jurisdictions along the secondary route as the shipment began to arrive at the dock. They noted that all concern was focused on the primary route with insufficient attention placed on the secondary route.

Recommendation: Problems regarding notification of emergency response officials along the secondary route need to be addressed prior to the next shipment.

4. Fragmented/Contradictory Information on Shipment:

The City of Davis Fire Department noted that the information they received about the location of the shipment or any updates on conditions seemed to be fragmented and at times contradictory. San Francisco City and County noted that law enforcement knew about the shipment before the emergency response services people did. Emergency services received notification from the State OES but when they passed it along, law enforcement already knew the date of shipment. Release of

notification of shipment arrival date was not well coordinated.

San Joaquin County noted that during the training process and the tabletop exercises, San Joaquin County agencies were informed that they would receive all notification that the primary route would receive. However, they reported that this was not the case.

They [San Joaquin County] started to hear about the ship coming into the San Francisco Bay from the media. When they contacted the OES Inland Region requesting clarification on notification, San Joaquin County was informed that OES was instructed to notify only the primary route even though the San Joaquin County was selected as the alternate route.

If at the last minute the alternate route became the primary route, San Joaquin County reported that there would have been a time delay in notifying all of the agencies within that county that could have been affected by the shipment.

Recommendation: The release of shipment arrival date (advanced notification) should be better coordinated. In addition, problems need to be addressed regarding notification of local jurisdictions along the secondary route.

5. TRANSCOM Needs Improvement Prior to Next Shipment:

The State OES noted problems with TRANSCOM including lost connections and the inability to reestablish connection. Upon reconnecting there was a problem with the mapping portion until the mapping path was reset. The system did not update in a timely manner. The train departed Butte County @ 0512 hours but TRANSCOM still showed the train in Butte County @ 0708 hours. Martinez Police Department wanted TRANSCOM set up at all EOC's.

Recommendation: TRANSCOM problems need to be addressed in coordination with the TRANSCOM improvement efforts by the Western Governors' Association WIPP Transport Advisory Group in preparation for nuclear waste shipments to the Waste Isolation Pilot Plant in New Mexico.

Security Planning

Martinez Police Department noted that the release of too much information to the public raised security issues.

Recommendation: The issue of releasing to the public too much information on the

shipment and the resulting security implications need to be resolved. Sacramento County recommended that the draft security plan should be completed earlier, and that the draft should be shared openly among appropriate local law officials in order to incorporate local comments.

Ineffective or Unnecessary Procedures

Regarding whether there were processes or procedures implemented which were either ineffective or unnecessary, none were identified by state agencies. Representatives of Butte County, the City of Martinez Police Department, and the City of Davis Fire Department said there was none of any consequence. Sacramento, Solano, and Yolo County said there were no procedures or preparations that they thought were ineffective or unnecessary. In response to questions regarding any ineffective procedures, Contra Costa County repeated their comments on the problems with the JIC. Mann County thought that keeping the media informed was helpful and that the various meetings and demonstrations helped ease fears. They also considered shipment escorts to be “an overkill”.

**Organizations Involved in Preparations
For the Foreign Spent Nuclear Fuel Shipment in California
July 21-22, 1998**

Federal Agencies

DOE Headquarters
DOE Idaho
DOE Oakland
DOE Livermore
DOE Savannah River
U.S. Navy@CNWS¹
Nuclear Regulatory Commission
U.S. Customs
U.S. Coast Guard
Federal Railroad Administration
U.S. Immigration and Naturalization
Federal Bureau of Investigation

Indian Tribes

Winnemucca Colony, Susanville, CA

California State Agencies

Energy Commission
Office of Emergency Services
Forestry and Fire Protection
Environmental Protection Agency
Public Utility Commission
National Guard
Highway Patrol
Department of Health Services
Department of Transportation
Department of Fish and Game

City and County Agencies

Butte County OES²
Contra Costa Sheriffs Office
Contra Costa EMS³
Contra Costa County PIO⁴
Contra Cost. Auditors Office

Contra Costa County Fire Dept.
City and County Agencies (Continued)

Concord Police Department
Contra Costa County OES
Contra Costa County Sheriff's Dept.
City of Davis Police Department
Contra Costa County Health Services HMP⁵
City of Davis Fire Department
Nevada County OES
Placer County OES
Placer County Sheriff's Department
City of Roseville Fire Department
Newcastle Fire Department
Placer County Environmental Health Dept.
Placer Hills Fire Department
South Placer Fire District
City of Rocklin Fire Department
Quincy Fire Department
Plumas District Hospital
Peninsula Fire Department
Greenville Medical Clinic
Chester Fire District
Plumas County Health
Sacramento County OES
Sacramento Fire Department
Sacramento Police Department
Sacramento County Sheriff's Dept.
San Francisco County and City OES
San Joaquin County OES
Lodi Fire Department
Solano County OES
Solano County Environmental Health
Suffer County Fire Department
Suffer County OES
Yolo County OES
Yuba County OES

Other

Western Interstate Energy Board
Western Governors' Association
INEEL/Lockheed Martin-Idaho
Martinez Refining Co. (Shell)
Tosco Refinery
Union Pacific Railroad
San Francisco Bar Pilots
American Medical Response

¹Concord Naval Weapons Station
²Office of Emergency Services
³Emergency Medical Services
⁴Public Information Office
⁵Hazardous Materials Program