



San Diego County Sheriff's Department

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William B. Kolender, Sheriff

William D. Gore, Undersheriff

June 29, 2006

The Honorable Janis Sammartino, Presiding Judge
San Diego Superior Court
PO Box 122724
San Diego, CA 92112

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SAN DIEGO

COUNTY GRAND JURY

Dear Judge Sammartino:

Response To The Grand Jury Report "Lack of San Diego County Evacuation Preparations" - In Accordance With §933(c) PC.

This report is in response to the San Diego County Grand Jury Report 2005-2006 filed on May 31, 2006. This report covers the Grand Jury's investigation into two instances in which citizens could receive advance warning to evacuate; a tsunami and an impending nuclear disaster at the naval bases.

The Grand Jury's report states that emergency operations personnel are not adequately prepared. The report states that people are in danger from these disasters, due in part, to a lack of understanding and complacency on the part of the public regarding the forces that might precipitate them. The report states that the public is not being educated as to how they should proceed if a tsunami or other disaster occurs. The Grand Jury has made recommendations in anticipation that they will achieve greater public readiness in case of such disasters.

This report will address each finding and recommendation that is pertinent to the San Diego County Sheriff's Department. Additionally, the Office of Emergency Services (OES) has prepared a response addressing each of the recommendations. The report is provided as an attachment and will be utilized in some responses by the San Diego County Sheriff's Department to the recommendations.

LACK OF SAN DIEGO COUNTY PREPARATIONS

Grand Jury Finding: Tsunamis pose a significant threat to life and property.

San Diego Sheriff's Department Response: The San Diego Sheriff's Department agrees with this finding.

Grand Jury Finding: Inundation maps showing possible San Diego County shoreline which might be submerged by tsunami waters is not adequate.

San Diego Sheriff's Department Response: The San Diego Sheriff's Department disagrees with this entire finding. The Sheriff's Department relies on OES in providing the best possible tsunami evacuation planning maps (via the University of Southern California (USC) Tsunami Research Group) for emergency preparedness. The USC methodology for the mapping process meets the standard for both the State of California and the National Tsunami Hazard Mitigation Program of National Oceanic and Atmospheric Administration (NOAA).

Grand Jury Finding: The San Diego Police Department needs to be on the same system as the rest of the county for emergency communications.

San Diego Sheriff's Department Response: The San Diego Sheriff's Department agrees with this finding.

RECOMMENDATIONS

06-66: *The San Diego County Sheriff's Office require inundation maps be revised to include inundation levels in 50 meter intervals.*

Sheriff's Department and OES Response: This recommendation will not be implemented because it is not warranted. In the attached document prepared by OES, a rather in-depth explanation is given explaining the development and production of San Diego County Tsunami Evacuation Planning Maps. The Sheriff's Department relies on OES in providing the best possible tsunami evacuation planning maps (via the University of Southern California (USC) Tsunami Research Group) for emergency preparedness.

In the rather extensive explanation provided by OES (see attached report), it is apparent that there is a lack of understanding in what the maps actually provide. The Tsunami Inundation Maps were developed by USC for the entire coastline of California. The tsunami maps do not provide depth of the flood waters at 500 meter intervals or any other set of intervals. It is unclear as to the origin of this inaccuracy.

The USC methodology for the mapping process meets the standard for both the State of California and the National Tsunami Hazard Mitigation Program of National Oceanic and Atmospheric Administration (NOAA). The San Diego County Tsunami Evacuation Planning Maps were developed through computer modeling based on potential earthquake sources. The maximum credible worst case run-up (which is the vertical height of a tsunami wave) to a 12.8 meter contour line was determined to be reasonable, and thus the standard for the inundation maps throughout San Diego County. (12.8 meters equates to approximately 42 feet).

06-67: *The San Diego Sheriff, the Mayors and City Councils for the cities of: Chula Vista, Del Mar, National City, Coronado, San Diego, Solana Beach, Encinitas, Carlsbad and Oceanside install emergency signage along the San Diego coastal corridor, directing citizens and visitors to safety in case of a tsunami emergency.*

Sheriff's Department Response: This recommendation will not be implemented because it is not reasonable for the Sheriff to implement. The San Diego Sheriff's Department contracts law enforcement for the cities of Del Mar, Solana Beach and Encinitas. The other cities listed in this recommendation do not fall under the San Diego Sheriff's Department jurisdiction.

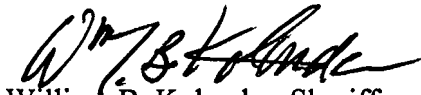
The San Diego Sheriff's Department does not have control over the installation of tsunami warning signs in these cities. Although the installation of these signs would seem reasonable with proper community education and planning, this recommendation is not within the decision-making or implementation authority of the San Diego County Sheriff's Department.

06-68: The San Diego Sheriff, the Mayors and City Councils for the cities of: Chula Vista, DelMar, National City, Coronado, San Diego, Solana Beach, Encinitas, Carlsbad and Oceanside find funding sources for the installation of warning sirens for an imminent devastating tsunami.

Sheriff's Department and OES Response: This recommendation will not be implemented because it is not warranted. Although warning sirens appear to be an immediate warning system, they do not direct citizens where to go and why. The San Diego Sheriff's Department and OES believe that combination warning systems are better ways of warning citizens, providing information and specific and exact directions to the public. Additionally, this information and associated directions can be provided in multiple languages.

The San Diego Sheriff's Department currently utilizes a community emergency notification system and has future system upgrades in progress. For example, Reverse 911 is capable of making emergency community notifications, specifically, weather-related evacuations as noted in the Grand Jury Report. The implementation of this system alone allows law enforcement to notify the community with rapid and specific instructions should evacuations be required. Notifications can be made in conjunction with other emergency broadcast systems such as the Emergency Alert Systems (EAS) and National Oceanic and Atmospheric Administration (NOAA) weather radios.

Sincerely,



William B. Kolender, Sheriff

WBK/sas
Enclosure (1)

| cc: Board of Supervisors



**San Diego County Office of Emergency Services
Response to Grand Jury Report of 5-31-06
“Lack of San Diego County Evacuation Preparations”**

The Grand Jury report addresses certain aspects of tsunami planning and preparedness including Tsunami Inundation Maps, Tsunami Warning, Tsunami Signage and overall preparedness. Additionally, the report briefly discusses the coordination between local governments and the U.S. Navy regarding a potential accident onboard a nuclear powered naval vessel. Included within all of these areas are some inaccuracies and/or inappropriate recommendations.

1. Tsunami Inundation Maps

The report states that “Interviews conducted by the Grand Jury revealed that Inundation Maps, prepared by the San Diego County Emergency Operations Center, in collaboration with the San Diego Sheriff’s Department, gave depth of the flood waters for every 500 meters inland.”

- a. The San Diego County Tsunami Evacuation Planning Maps were prepared by the University of Southern California’s (USC) Tsunami Research Group under a research grant awarded by the Governor’s Office of Emergency Services.
- b. The USC team developed a computer model to determine the maximum run-up of a tsunami event. Once all possible events were calculated, the highest run-up was sent to the State OES Geographic Information Systems Research Analysts who took this number (12.8 Meters for San Diego County) and sampled Digital Elevation Models (DEM) from the USGS (United States Geological Survey). Everything on the DEM that fell into the range between zero (sea level) and 12.8 meters was extracted and converted into a run-up area. So the maps do not provide “depth of the flood waters for every 500 meters inland.”, but rather one 12.8 Meter Run-up Line. Funding from the National Tsunami Hazard Mitigation Program for the past couple of years has been limited to about \$3 million annually for five states (Washington, Oregon, California, Hawaii and Alaska) which equates to approximately \$274,000 for the entire state of California and this includes other areas of preparedness in addition to mapping. Production of maps with “50 meter intervals” would be cost-prohibitive.

2. Tsunami Warning

The report contends that “sirens appear to be a more effective way to warn citizens of impending disaster than the public address systems used in helicopters and police cars circulating throughout the city.”

Warning sirens are very expensive. Costs per siren range in the tens of thousands of dollars not including engineering and installation costs which are above and beyond the base price. Additionally, sirens require ongoing maintenance and testing. Sirens typically cover an area of about 2-3 miles and to be effective, they need to overlap one another. Their range is dependent on the topography of the area and can be difficult to hear if one is inside a building. There are also the issues of training and public education associated with sirens. When sirens are sounded, the public needs to know what to do, i.e., tune in to their local (EAS) Emergency Alert System Station for instructions on where to go, etc. Ongoing training in a number of different languages is necessary.

A combination of several types of warning systems is recommended. These include Reverse 911 Systems, EAS messages and NOAA Weather Radios, coupled with route alerting.

3. Tsunami Signage

The report asserts that “Signs on all main thoroughfares are essential to direct citizens and visitors to avenues of escape and to shelters from a tsunami.”

Caltrans has posted some examples of tsunami signage on their website (www.dot.ca.gov/hq/traffops/signtech/signdel/tsunami.htm). The most appropriate types of signage are signs with general information such as, “Tsunami Hazard Zone – In Case of Earthquake Go to High Ground or Inland”. Due to the potential for hazards from falling objects, collapsed buildings, etc., during an earthquake, signs indicating “Tsunami Evacuation Route” or “Tsunami Evacuation Site” should not be designated in favor of directions to go higher ground while monitoring for hazards.

4. Tsunami Preparedness

The report finds that “the emergency operations personnel are not adequately prepared.”

The County Office of Emergency Services (OES) has provided staff to serve on the State OES Tsunami Guidance Steering Committee since 1997. One of the products of the Tsunami Guidance Steering Committee is the “*Local Planning Guidance on Tsunami Response*” that was distributed to San Diego County Coastal cities at a tsunami workshop in 2000.

Other San Diego County OES Preparedness Actions in this area include:

- a. Tsunami Preparedness information on the OES website (www.sdcounty.ca.gov/oes/disaster_prep/tsunami/)
- b. Development of a Tsunami Evacuation Plan Template
- c. Development of an Earthquake/Tsunami Concept of Operations

- d. Co-hosting with the National Weather Service (NWS) a four-hour workshop for the coastal cities on 3/3/05
- e. Co-hosting with State OES a one-day workshop for coastal cities on 8/31/05
- f. Development of EAS messages for issuance in the event of a Tsunami Watch or Warning
- g. Participation in a tsunami tabletop exercise at the CESA (California Emergency Services Association) Conference on 9/26/05
- h. OES will co-host a Tsunami Workshop that is open to the public on 7/29/06.

5. Nuclear Incident

All of the information cited in the Grand Jury report referring to coordination between local governments and the U.S. Navy regarding a “nuclear incident occurring on the Naval bases of San Diego near the City of Coronado” came from an interview with the City Manager from the City of Coronado.

The report states:

“The City Manager of Coronado stated that there is an agreement in effect with the Commander of the North Island Naval Base to inform the Mayor of Coronado immediately if there is a possibility of a ‘nuclear incident’ occurring on the Naval bases of San Diego near the City of Coronado. This information is to be communicated to governmental heads and emergency personnel in all other communities of San Diego County.”

This is true, but incomplete. The U.S. Navy also has a similar agreement with the City of San Diego. The Navy has also agreed to notify the County of San Diego (through the County Office of Emergency Services) of any radiological incident with the potential for impact beyond the vessel itself.

Since the inception of the naval nuclear propulsion program, (1955), there has never been a reactor accident, or any release of radioactivity that has had a significant effect on the public or the environment. Nuclear powered naval vessels have been home-ported in San Diego since the late fifties (nuclear submarines). In the early nineties the decision was made to home-port nuclear powered aircraft carriers at Naval Air Station (NAS) North Island. This caused concern and alarm among some of the residents of the Cities of Coronado and San Diego. Accordingly, a meeting was set up with representatives from the Navy, the cities and OES to discuss safety issues. OES also developed an initial set of operating procedures to be followed in the very unlikely event of an accident onboard a nuclear powered ship.

Briefings by the Navy indicate that their worse case scenario shows the release of radioactive material will not go beyond the base boundary. This is true for both NAS North Island and the Submarine Base. Attached are planning maps for both.

In August 2001 the Cities of Coronado and San Diego, along with OES participated in a full-scale exercise with the Navy to test response plans and capabilities. Although the scenario wasn't a nuclear incident, it tested notification and communications procedures between and among local governments and the Navy.

The County of San Diego and the Cities of Coronado and San Diego have also been actively involved in working with the Commander Submarine Force, U.S. Pacific Fleet Representative West Coast on a series of exercises involving radiological material. The first exercise, held in 2004, was a full scale exercise held on NAS North Island. It simulated a traffic accident involving shipment of low level radioactive waste from North Island. Coronado Fire participated as the Incident Commander in the field as well as providing a representative to the Navy's Emergency Command Center (ECC). OES and the City of San Diego were also present in the ECC.

The next exercise was a tabletop held March, 2006 which simulated a reactor accident on one of the submarines tied up at the Submarine Base on Point Loma. A full-scale exercise utilizing a very similar scenario is scheduled for June 7, 2006. OES, Emergency Medical Services and the Department of Environmental Health, as well as the Cities of Coronado and San Diego, will be participating.

Reactor incidents on board U.S. Navy ships differ significantly from those at commercial power plants. This is primarily the result of the differences in design and the requirement for Navy reactors to be able to withstand battle damage. Major differences between naval and commercial reactors are:

- Naval fuel is designed to withstand combat shock loads in excess of 50 times the force of gravity without releasing radioactivity.
- Naval reactors are rated at approximately 10% of commercial power plants.
- This significantly reduces the source-term (amount of radioactive material present) of each reactor.
- The ship can be moved away from populated areas.

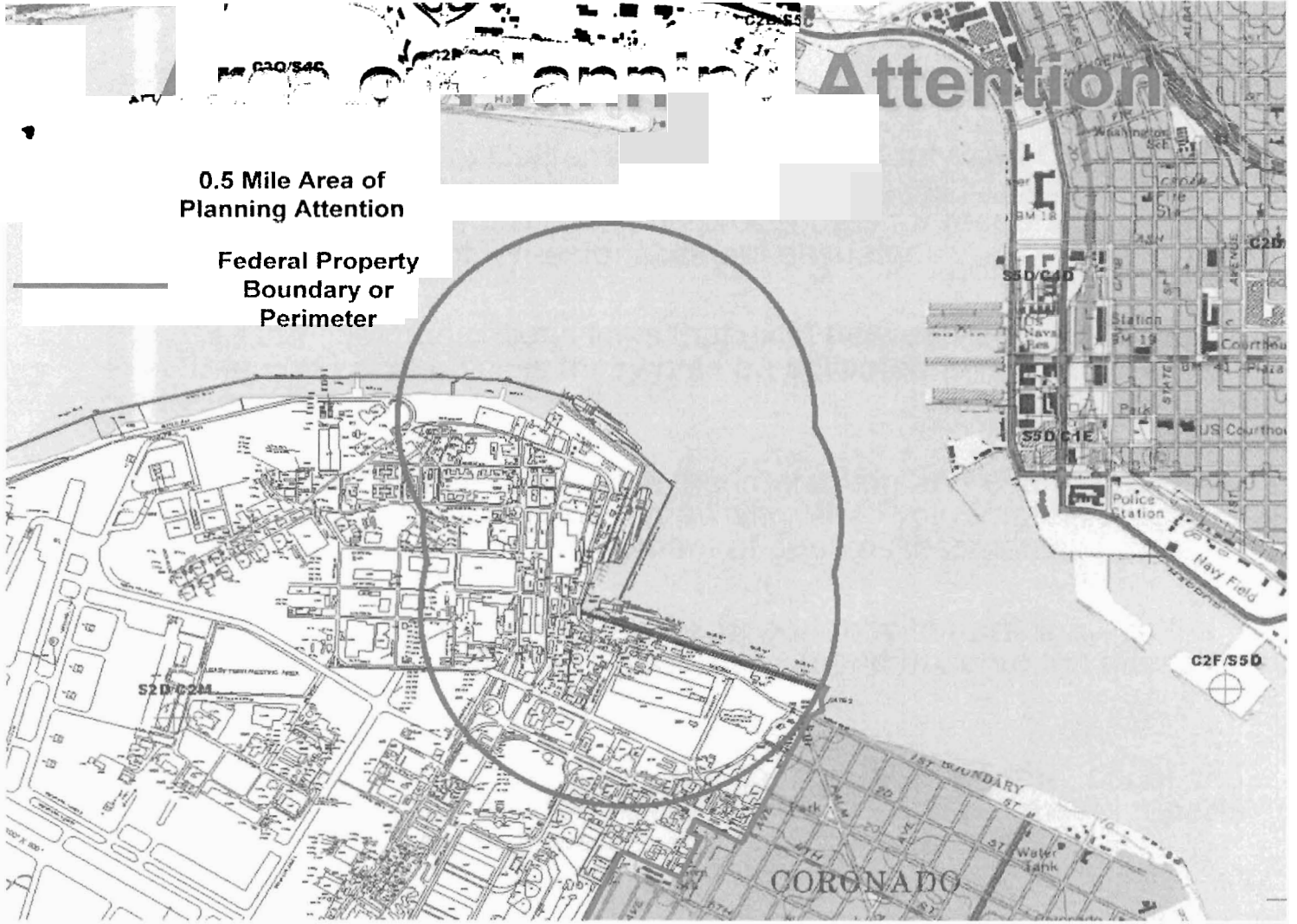
The report then states that "The normal reporting of such an accident...could be time consuming and deadly..." We are refining our notification procedures. OES is working closely with the Navy to ensure our Duty Officer is notified immediately of any reactor incident. The Navy has indicated that they would be notifying local officials within 10 minutes of staffing up their Emergency Command Center.

The final comment on nuclear powered ships states that "...evacuation would be ill-advised in most scenarios...Public education for this contingency is critical." This information is very similar to that provided for the San Onofre Nuclear Generating Station and can be found on the OES website at www.sdcounty.ca.gov/oes/disaster_prep/san_onofre/#Q2.

For any questions concerning this response, please call Ron Lane, Director, Office of Emergency Services at (858) 565-3490.

Ron Lane
Director
San Diego County Office of Emergency Services

Naval Air Station North Island



Submarine Base, Point Loma

