



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

APR 26 2002

Gregory M. Rueger, Senior Vice
President, Generation and Chief Nuclear Officer
Pacific Gas and Electric Company
Diablo Canyon Power Plant
P.O. Box 3
Avila Beach, CA 93424

SUBJECT: END-OF-CYCLE PUBLIC MEETING FOR THE DIABLO CANYON POWER
PLANT BETWEEN THE NRC AND PACIFIC GAS AND ELECTRIC COMPANY

Dear Mr. Rueger:

This refers to our meeting conducted at the Embassy Suites Hotel, 333 Madonna Road, San Louis Obispo, California, on April 17, 2002 at 6:30 p.m. (PST). At this meeting, the NRC met with you and your management staff to discuss the NRC's independent reactor oversight process and the results of the NRC's implementation of the oversight process at the Diablo Canyon Power Plant for the period April 1 through December 29, 2001. In addition, the NRC discussed two issues of regional and national interest. These issues involved potential degradation of reactor vessel heads at pressurized water reactors and plant security.

The NRC and Pacific Gas and Electric Company responded to questions from the audience following the presentation. During the meeting the NRC staff responded to a question from the audience regarding reprocessing of spent fuel. The NRC noted that during the Carter Administration, President Carter banned spent fuel reprocessing. However, it should be noted that this decision was overturned by President Reagan during his administration.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Should you have any questions concerning this meeting, we will be pleased to discuss them with you.

Sincerely,

A handwritten signature in black ink, reading "W.B. Jones", is written over the typed name.

William B. Jones, Chief
Project Branch E
Division of Reactor Projects

Dockets: 50-275; 50-323
Licenses: DPR-80; DPR-82

Enclosures:

1. Attendance List
2. Question List
3. Presentation Slides
4. Cancer Study
5. Speech by NRC Chairman Meserve, 01/17/2002

cc w/enclosures:

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San Luis Obispo County Board of
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Karen Armes, Acting Regional Director
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Presidio of San Francisco
San Francisco, California 94129

Pacific Gas and Electric Company

-4-

Michael Lady, Mayor
City of Arroyo Grande
P.O. Box 550
Arroyo Grande, CA 93421

Stephen Lieberman, Mayor
City of Grover Beach
P.O. Box 365
Grover Beach, CA 93483

Rodger Anderson, Mayor
City of Morro Bay
595 Harbor
Morro Bay, CA 93442

Allen Settle, Mayor
City of San Luis Obispo
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San Luis Obispo, California 93401

Rudy Natoli, Mayor
City of Pismo Beach
760 Mattie Road
Pismo Beach, California 93449

ENCLOSURE 1
ATTENDANCE LIST

END-OF-CYCLE MEETING ATTENDANCE

LICENSEE/FACILITY	Pacific Gas & Electric Co. - Diablo Canyon
DATE/TIME	April 17, 2002; 6:30 p.m.
LOCATION	San Luis Obispo Embassy Suites
NAME (PLEASE PRINT)	ORGANIZATION
James Becker	Pacific Gas & Electric
Gregory Suber	NRR
Pat Nugent	Pacific Gas & Electric
Phil Clark	Diablo Canyon ISC
Jim Booker	Diablo Canyon ISC
Yvonne Floyd	Public
Jim Tomkins	Pacific Gas & Electric
David Sneish	The Tribune
Henriette Groot	Sierra Club
Kay Barbour	Public
Jim Barbour	Public
Mark Frantz	Pacific Gas & Electric
Michele Frantz	Pacific Gas & Electric

END-OF-CYCLE MEETING ATTENDANCE

LICENSEE/FACILITY	Pacific Gas & Electric Co. - Diablo Canyon
DATE/TIME	April 17, 2002; 6:30 p.m.
LOCATION	San Luis Obispo Embassy Suites
NAME (PLEASE PRINT)	ORGANIZATION
Drew Jackson	Public
Gino Corridori	KSBY - TV
Shari Small	KSBY - TV
Jeff Hays	Pacific Gas & Electric
Tom Jones	Pacific Gas & Electric
Missie H.	Pacific Gas & Electric
Ron Alsop	SLO County Office of Emergency Services
Greg Ruger	Pacific Gas & Electric
J. Strickland	Pacific Gas & Electric
Debbie Sobozak	Public
Mike Sobozak	Public
Michelle Gainey	Senator Jack O'Connell
W. Bruce Lindsay	Public

END-OF-CYCLE MEETING ATTENDANCE

LICENSEE/FACILITY	Pacific Gas & Electric Co. - Diablo Canyon
DATE/TIME	April 17, 2002; 6:30 p.m.
LOCATION	San Luis Obispo Embassy Suites
NAME (PLEASE PRINT)	ORGANIZATION
Claire Lyon	Public
Peter Wagner	Sierra Club
June von Ruden	MFP
Marla Mowissey	Public
Sandy Agalos	Assemblyman Abel Maldonado
Nevin Hindiyeh	DCPP

ENCLOSURE 2

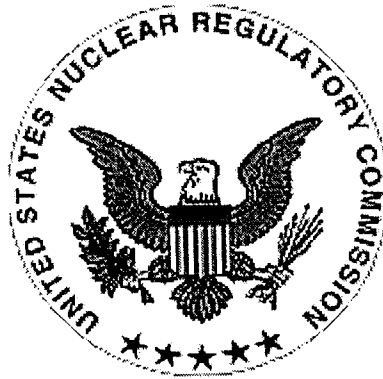
QUESTION LIST

END-OF-CYCLE MEETING Question & Answer Sign Up

LICENSEE/FACILITY	Pacific Gas & Electric Co. - Diablo Canyon
DATE/TIME	April 17, 2002; 6:30 p.m.
LOCATION	San Luis Obispo Embassy Suites
NAME (PLEASE PRINT)	TOPIC
Bill Denneen	Dry Storage
Henriette Groot	- Office in Monterey - Safety Committee
Peter Wagner	Security of liquid storage pools for high level waste
Jim Barbour	Dry Cask Storage
June von Ruder	Multiple

ENCLOSURE 3
PRESENTATION SLIDES

Nuclear Regulatory Commission Region IV



End of Cycle Meeting for Diablo Canyon

6:30 PM Opening Remarks

6:35 PM Introductions

6:40 PM Regulatory Oversight Process and Diablo Canyon Assessment

7:10 PM Current Industry Issues

7:20 PM Questions and Answers

10:00 PM Conclude Meeting

ANNUAL ASSESSMENT MEETING



Nuclear Regulatory Commission
Region IV



Meeting Agenda

- **REGULATORY OVERSIGHT**
- **FINDINGS AND ASSESSMENTS**
- **ADDITIONAL FOCUS AREAS**
- **QUESTIONS AND ANSWERS**



NRC Meeting Guidelines

- **Registration Table**
- **Handouts**
- **Questions and Answers**
- **Feedback Forms**



NRC Personnel

Bill Jones

**Chief, Project Branch E
Division of Reactor
Projects**

David Proulx

**Senior Resident Inspector
Diablo Canyon**

Terry Jackson

**Resident Inspector
Diablo Canyon**



NRC Personnel

Elmo Collins	Deputy Director Division of Reactor Projects
Stu Richards	Project Director, Nuclear Reactor Regulation (NRR)
Girija Shukla	Project Manager, NRR
Tony Gody	Chief, Operator Licensing Division Reactor Safety

Pacific Gas & Electric

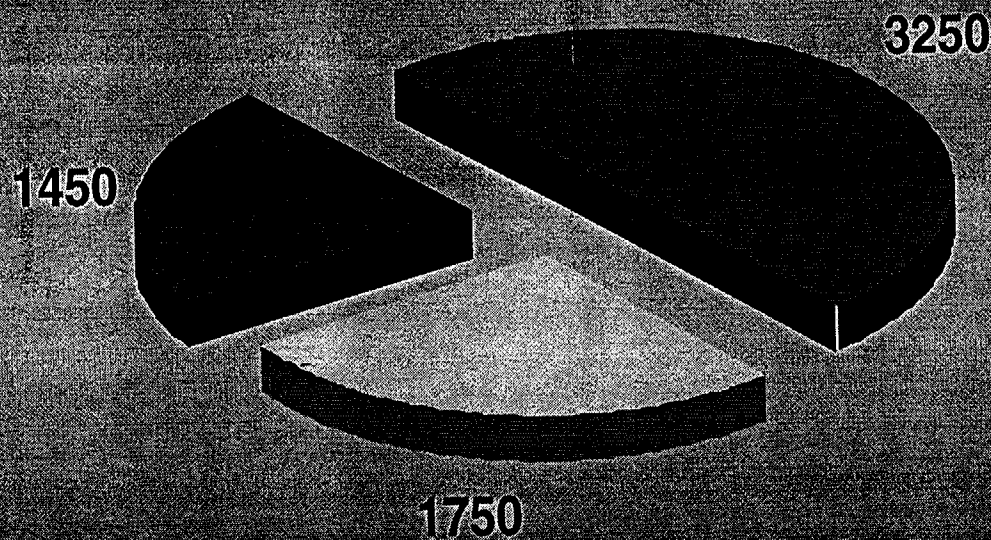
Introductions



NRC Performance Goals

- **Maintain safety and protect the environment**
- **Enhance public confidence**
- **Improve regulatory effectiveness, efficiency and realism for decision making**
- **Reduce unnecessary regulatory burden**

Overall NRC Effort for the 9 Month Assessment Period



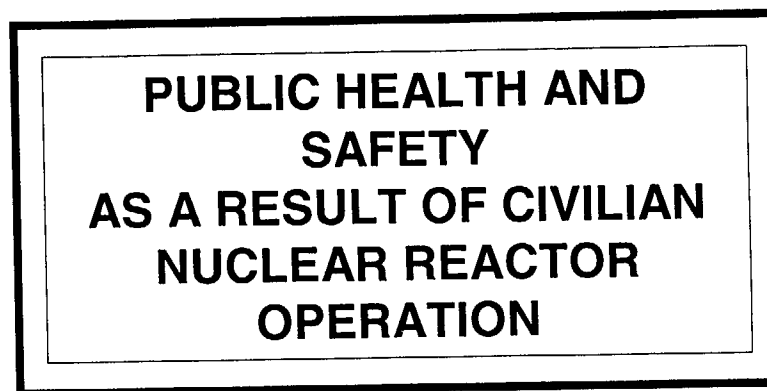
- Headquarters - 1750
- Regional - 1450
- Resident - 3250

Total hours - 6450

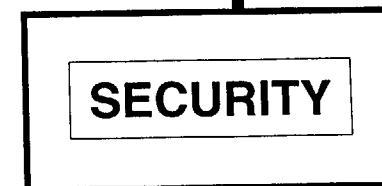
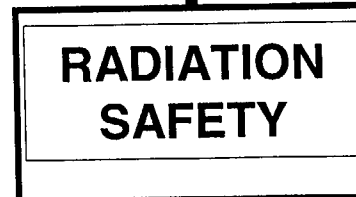
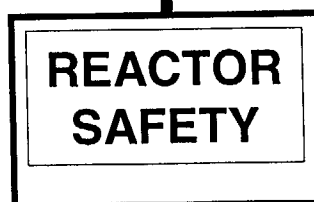


Oversight Areas

**NRC'S
Overall
Safety
Mission**



**Strategic Performance
Areas**



Crosscutting Areas

Human Performance

Corrective Action

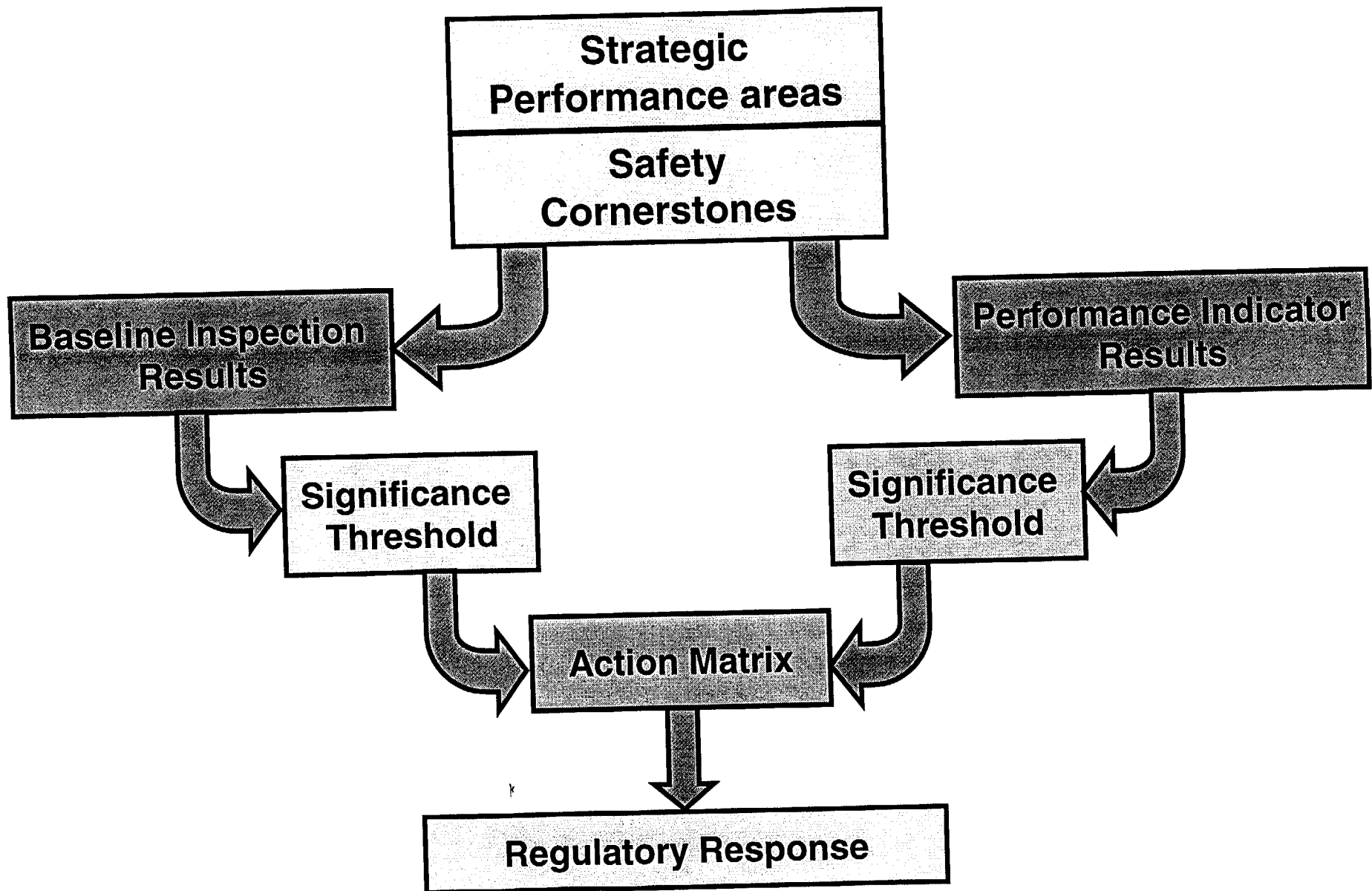
**Safety Conscious
Work Environment**



Key Aspects of the Assessment Program

- **Objective review of licensee performance**
- **Action Matrix determines agency response**
- **Plant specific assessment letters**
- **Information on NRC public web site**

Reactor Oversight Process





Reactor Oversight **Process**

SAFETY SIGNIFICANCE

GREEN

- very low

WHITE

- low to moderate

YELLOW

- substantial

- high



Performance Indicators

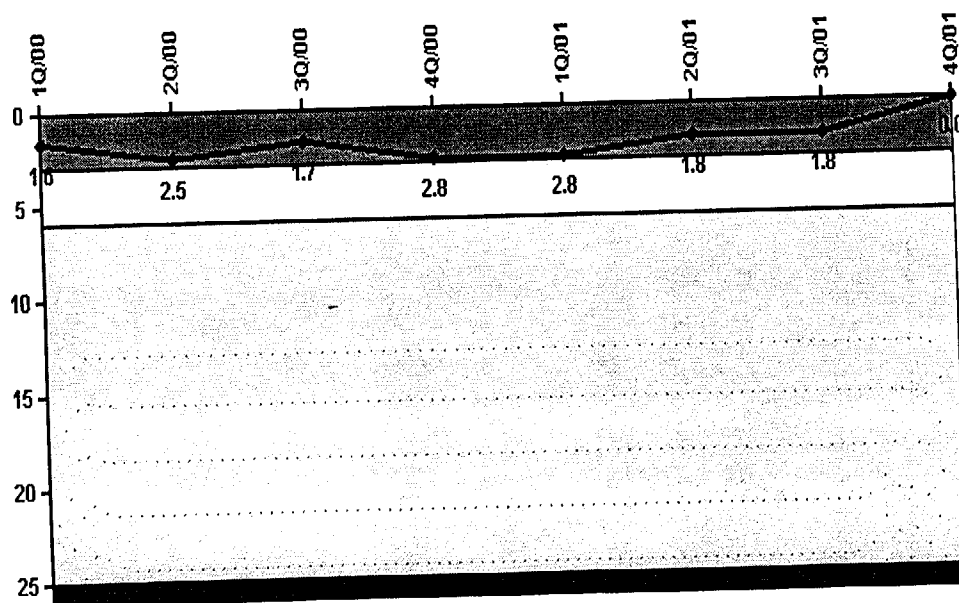
- **Provide objective measures**
- **Indicators for all Strategic Areas**
- **NRC verifies through inspections**



Performance Indicators

Unplanned Scrams per 7000 critical hours

Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Diablo Canyon U-1

Thresholds

White > 3.0

Yellow > 6.0

Red > 25.0



Resident Inspectors

- **Live in Community**
- **Prompt Response Capability**
- **Stationed at Plant**



Regional Inspectors

- **Specialized**
- **Team Inspections**
- **Reactive Inspections**



Baseline Inspection **Program**

- **Gathers objective evidence of plant safety**
- **Conducted at all plants**
- **Focuses on safety-significance**
- **Monitors licensee effectiveness in finding and fixing safety issues**



Event Follow-Up and Supplemental Inspections

- **Review events for significance**
- **Follow-up significant inspection findings**
- **Determine causes of performance declines**
- **Provide for graduated response**



Inspection Program

- **Inspection reports describe findings and regulatory issues that are more than minor**
- **Inspection reports are publicly accessible**

www.NRC.gov/reading-rm/adams.html



Assessment Program

- **Objective review of licensee performance**
- **Action Matrix determines agency response**
- **Plant specific assessment letters**
- **Information on NRC public web site**



Plant Safety Performance Summary



NRC Inspection Scope

- **Performed in each Strategic Area**
- **Verify Performance Indicator Data**
- **Considers Crosscutting Issues**



Performance Indicator **Results**

**All Performance Indicators are within
the Licensee Response Band**

**Performance Indicator results
available on the NRC's public web
site**



Inspection Results

Inspection findings were of very low safety significance

Special inspection in response to grass fire

No supplemental inspections performed



Special Inspection

- **Offsite and Onsite Consequences from Control Burn**
- **Challenge to Plant Operations**
- **Corrective Actions**
- **Very Low Safety Significance**

Pacific Gas & Electric

Response



Assessment Results

- **Licensee effectively managed:**
 - **Reactor Safety**
 - **Radiation Safety**
 - **Plant Security**
- **Licensee Response Column**
- **Strategic Area Objectives Fully Met**
- **Public Health and Safety Were Assured**

Pacific Gas & Electric

Response



Nuclear Industry Issues

Security at Nuclear Power Plants

Reactor Vessel Head Degradation



NRC Actions

- **NRC Responded As-Needed**
- **Implemented Emergency Response**
- **Mandated Licensee Actions**



Security Programs

Substantial security measures in place prior to terrorist attacks

Federal, State, Local and Licensee integrated response to terrorist threat



Security Response

NRC Advisories

- **Nuclear power plants at highest security level**
- **Updated with integrated threat information**

Licensee Actions Verified

NRC Issues Security Order



Reactor Vessel Head **Integrity**

- **Small leaks were discovered**
- **Mandated Licensee Actions**
 - **NRC Bulletin 2001-01 “Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles”**
- **Identified larger problem**



Reactor Vessel Head **Integrity**

- **Mandated Licensee actions**
 - **NRC Bulletin 2002-01 “Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity”**
- **Assure all plants are adequately inspected for this problem**
- **Ensure similar degradations do not occur at other facilities**

Pacific Gas & Electric

CLOSING REMARKS



Summary

- **Comprehensive Oversight Program**
- **Pacific Gas and Electric maintained public health and safety**
- **NRC capability and resources to respond and impose additional requirements**

Contacting the NRC

- **Report an Emergency:**
(301) 816-5100 (collect)
 - **Report a Safety Concern:**
(800) 695-7403 or Allegation@nrc.gov
 - **General Information or questions:**
www.nrc.gov
- Select “What we do” for Public Affairs**

ENCLOSURE 4

CANCER STUDY

In 1990, the National Cancer Institute (NCI) (<http://rex.nci.nih.gov>) published the results of a study which looked at cancer in populations living near nuclear facilities. In this study, the NCI examined cancer incidence and mortality in areas surrounding 52 commercial nuclear power stations as well as 10 other facilities that reprocessed nuclear fuel, produced radioactive isotopes, separated isotopes, or carried out other activities involving radioactive materials. The plants examined were those that went into operation by 1981. In California, those plants included San Onofre and Rancho Seco. Diablo Canyon was not included in this study. Radiation releases from nuclear power plants are typically quite low, typically delivering, at a maximum, less than 5% of the radiation exposure that is normally received from natural background sources. . Releases from Diablo Canyon are consistent with the San Onofre Station in southern California, as well as with other PWRs throughout the country.

Based on the data collected, (approximately 900,000 cancer deaths around nuclear power plants, 350,000 prior to startup and 530,000 after startup), the NCI found no suggestion that nuclear facilities may be linked causally with excess deaths from leukemia or from other cancers in populations living nearby. The NCI study concluded "from the evidence available, this study has found no suggestion that nuclear facilities may be linked causally with excess deaths from leukemia or from other cancers in populations living nearby." The NCI states that "it is true that a person's chance of developing cancer within his or her lifetime is almost twice as great today as it was half a century ago....this increase is caused largely by the facts that people are living longer and cancer is more prevalent in older people...When corrected for the increasing average age of the population, cancer rates in the United States have actually been stable or even falling slightly in the past several years." Additionally, the American Cancer Society (www.cancer.org) has concluded that although reports about cancer case clusters in such communities have raised public concern, studies show that clusters do not occur more often near nuclear plants than they do by chance elsewhere in the population. The American Cancer Society recognizes that "public concern about environmental cancer risks often focuses on risks for which no carcinogenicity has been proven or on situations where known carcinogen exposures are at such low levels that risks are negligible. Ionizing radiation emissions from nuclear facilities are closely controlled and involve negligible levels of exposure for communities near such plants."

The California Cancer Registry (CCR) (www.ccrca.org) monitors the occurrence of cancer among Californians, both incidence and mortality. By law, since January 1988, all new cancer cases diagnosed in California residents have been reported to the CCR. Since 1988, cancer incidence rates in California have declined by 8 percent. The CCR is supported by 10 regional offices which track cancer incidences and mortality. The data they collect is available via the internet. No unusual instances of cancers in the counties surrounding Diablo Canyon (www.tccr.org) or San Onofre (www.epi.uci.edu) have been detected in the population.

The evaluation of health effects from exposure to radiation, both natural and man-made, is an ongoing activity involving public, private and international institutions. International and national organizations such as the International Commission on Radiological Protection (ICRP) and National Council on Radiation Protection and Measurements (NCRP) provide consensus standards developed from recent and ongoing research. NRC's regulatory limits for effluent releases and subsequent dose to the public are based on the radiation protection recommendations of these organizations. NRC provides oversight of all licensed commercial nuclear reactors to ensure that regulatory limits for radiological effluent releases and the resulting dose to the public from these releases are within the established limits. All nuclear power plants file an annual effluents report that details the quantities and types of radionuclides that are released. Doses to the public from the effluent stream is routinely reported and these doses are micro to millirem doses, much less than the dose received from natural background radiation. The NRC routinely inspects the effluent program at each nuclear power plant and there are resident inspectors at each plant site who monitor the daily operations of the nuclear station. The regulations related to radiological effluents and dose to the public can be found in 10 CFR Part 20 and 10 CFR Part 50, Appendix I.

ENCLOSURE 5

SPEECH BY NRC CHAIRMAN MESERVE, 01/17/2002

NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200
Washington, DC 20555-0001 E-mail: opa@nrc.gov
Web Site: www.nrc.gov

S-02-001

NUCLEAR SECURITY IN THE POST-SEPTEMBER 11 ENVIRONMENT

Dr. Richard A. Meserve
Chairman, U.S. Nuclear Regulatory Commission
National Press Club
Washington, DC
January 17, 2002

Good afternoon. I am pleased to have this opportunity to address you.

I suspect that you have a strong interest in security at nuclear power plants. I hope to provide you with a summary of how the Nuclear Regulatory Commission approaches security matters, with a description of some of the actions taken in the aftermath of the September 11th attacks, and with a survey of some of the major challenges ahead.

Let me make a few general points at the outset.

First, and perhaps most important, since September 11th there have been no specific credible threats of a terrorist attack on nuclear power plants. Of course, there is information that al Qaeda considers nuclear facilities as potential terrorist targets. In light of the high general threat environment, we and our licensees have maintained our highest security posture.

Second, the physical protection at nuclear power plants is very strong. I know that there has been a lot of discussion concerning the adequacy of security in light of the sensitivity of these facilities. But let me assure you that nuclear plants are not "soft" targets. For decades, security against sabotage has been an important part of the NRC's regulatory activities and our licensees' responsibilities. The plants are among the most formidable structures in existence and they are guarded by well trained and well armed security forces. The security at nuclear plants is and has always been far more substantial than that at other civilian facilities. And it has been augmented since September 11.

Third, I want to assure you that the NRC is responding to the terrorist threat in a comprehensive fashion. September 11 has served to alert America to the need for re-examination of past practices. As a result, the NRC is undertaking a top-to-bottom review of our security program to ensure that we have the right protections in place for the long term.

I. The Existing Security System.

Let me start by providing you with a more detailed description of our security requirements.

Each licensee has a responsibility to defend its nuclear power plant, subject to regulatory scrutiny by the NRC. Under our existing regulatory system, we require that our licensees demonstrate a high assurance that they can defend their facilities against a so-called "design-basis threat." Although the details of that threat are classified,

it basically involves a commando attack by several skilled attackers, armed with automatic weapons, with hand-carried explosives and incapacitating agents, and with assistance by an insider, the use of a 4-wheel drive vehicle, and a vehicle bomb. Our licensees defend against such a threat by the establishment of a fenced perimeter (usually a double fence topped with concertina wire), intrusion detection devices, layers of access barriers, heavily armed and carefully trained guard forces, armored defensive positions, and a comprehensive defensive strategy. The adequacy of the defenses is subject to detailed inspection by the NRC, including periodic force-on-force exercises designed to probe for weaknesses so that corrections can be made.

The design basis threat does not include an aircraft attack. In the aftermath of September 11, many have asked about the consequences if a large airliner, fully loaded with jet fuel, had crashed into a nuclear power plant. We had to say candidly that we were not sure. We know that reactor containments are extremely robust, typically being constructed with two to five feet of reinforced concrete with an interior steel lining. The plants benefit from redundant and diverse safety equipment so that if any active component were unavailable, there is another means to satisfy its function. The operators are trained to respond to unusual events. And carefully designed emergency plans are in place. Nuclear power plants are certainly far more capable to respond to an aircraft attack than other civilian facilities. But the NRC has never previously had reason to perform a detailed engineering analysis of the consequences of a deliberate attack by a large airliner. We are performing those analyses now.

I am sometimes asked whether a terrorist might be able to gain employment at a nuclear plant. Let me describe some of the regulatory requirements that bear on this issue. At the time of employment, every potential employee who will have access to safety equipment is required to pass various background checks, including examination of past employment, references, credit history, and an FBI criminal record check, as well as to undergo psychological testing. During the course of employment, each employee is also subject to fitness-for-duty requirements, which include random drug and alcohol testing. Behavioral monitoring of employees is also required so as to ensure that any aberrant actions receive appropriate attention. Of course, access to the plants is controlled and there are portal detectors for metals and explosives. We are examining whether these requirements should be supplemented in the course of our top-to-bottom review.

II. Response to the September 11 Events

Let me turn now to the events on September 11 and the NRC's subsequent actions.

Shortly after the second crash into the World Trade Center, the NRC activated its Headquarters Emergency Operations Center and the parallel Incident Response Centers in each of NRC's four regional offices. We immediately called for our major licensees to go to the highest level of security, which we have maintained since that time and augmented as circumstances warranted. This heightened security stance generally includes, among other resources, increased patrols, augmented security forces and weapons, additional security posts, heightened coordination with law enforcement and military authorities, and additional limitations on access of personnel and vehicles to the site.

The NRC's safeguards analysts have worked continually with the intelligence and law enforcement agencies to assess the general threat environment, as well as information about specific targets. In order to assess whether terrorists may have been conducting surveillance of nuclear facilities, we, with assistance from Federal, State and local law enforcement, have carefully examined unusual incidents, such as fly-overs, threats, or the possible probing of defenses. NRC investigators have also examined incidents over the past two years that might have seemed innocent or odd at the time, but that in retrospect might suggest a pattern that should be referred to the FBI for follow-up.

As you might expect, there have been extensive interactions with other governmental agencies. We have worked closely with the new Office of Homeland Security, the FBI, the Federal Emergency Management Agency, the

Federal Aviation Administration, the military, and the Department of Energy, among others. And I have communicated with the governors of 40 states so as to ensure that any state defensive assets (National Guard or state police) are used as needed to augment our licensees' defensive strategies.

III. Fundamental Challenges

Let me turn now to some longer-term challenges. The Commission has not yet had the opportunity to complete its consideration of some of these issues, so these comments should be seen as my own.

A. The Need for a Comprehensive Security Strategy

I shall first discuss the context for examining the security of nuclear plants.

As you know, there have been numerous discussions about the potential vulnerability of nuclear power plants to terrorist attack. Some argue that the only acceptable response to the risk is to shut down the Nation's reactors. Others contend we can continue with nuclear power -- which provides about 20 percent of the Nation's electricity so long as appropriate security measures are in place.

The crimes of September 11 were designed to shock the American people in part by the very fact that they involved such large and imposing targets. In the effort to ensure that no such horror ever occurs again, there is a danger of drawing the wrong lesson from the attacks: of blaming the victim, so to speak. The destruction of a skyscraper does not suggest it was a mistake to build skyscrapers, any more than the dissemination of anthrax spores through the mails proves that it is an error to operate a postal service. If we allow the threats of terrorists to determine what we build and what we operate, we would be headed into the past back to an era without suspension bridges, harbor tunnels, stadiums, or hydroelectric dams, let alone skyscrapers, liquid natural gas terminals, chemical factories, or nuclear power plants.

The problem is not the terrorists' targets, but the terrorists themselves. It is they who need to be eliminated, not the creations of a modern industrial society. It is thus my view that a strategy of risk avoidance the elimination of the threat by the elimination of potential targets does not reflect a sound response. Rather, the evaluation of the terrorist threat to infrastructure, including nuclear plants, should include a careful and realistic examination of risks and benefits and the development of appropriate defenses in light of those risks and benefits.

September 11 has made clear that our society must increase the vigilance with which we defend ourselves from terrorist attack. But the reality is that, as a society, we do not have infinite funds to spend for this purpose. Accordingly, we must allocate our defensive resources in a fashion that serves to minimize the total risk. As a result, any policy regarding the defense of nuclear facilities should be integrated in the overall response to the threat to infrastructure of all kinds.

Clearly this is not a task that the NRC can undertake alone. We have sought, and will continue to seek, appropriate security at facilities subject to our jurisdiction. We look forward to working with the Office of Homeland Security and others to ensure that our strategy is coordinated with the Nation's overall defensive posture. I see this as a great challenge, however, because the task is large and the defense of infrastructure involves government at all levels.

B. Public and Private Roles.

The second policy issue that I would like to discuss relates to public and private roles in the defense against terrorism. This is an issue that the events of September 11 have brought clearly to the fore. As I have explained, the NRC licensees must defend nuclear power plants against the "design-basis threat." September 11 obviously revealed a type of attack -- a suicidal assault using a large commercial aircraft -- that has not been part of the

NRC's planning (or that of any other agency with similar responsibilities). Moreover, the event has demanded that the NRC and its licensees reevaluate the scope of potential assaults of all types.

There are limits, however, as to what should be expected from a private guard force, even as assisted by local law enforcement. For example, if it were determined that nuclear plants should be defended against aircraft attack, I cannot conceive that the NRC would expect licensees or local law enforcement to acquire and operate anti-aircraft weaponry. Rather, this obligation would be one for the military. Similarly, there might be other types of attacks which should properly involve governmental response because of the size of the assumed attacking force or the equipment that must be employed in defense. As a result, in its development of policy, the NRC must be prepared to differentiate the defensive obligation that is borne by licensees from that which must be undertaken by the government.

As part of the top-to-bottom review that I mentioned earlier, the NRC is examining the new threat environment in coordination with various other agencies of Government. There may also have to be an additional discussion with the military, the States, and local law enforcement about the provision of governmental assets at appropriate times. I do not expect that defining the appropriate boundary between the public and private sector in the defense of nuclear facilities will be easy.

C. The Balance Between Security and Openness.

The third issue relates to the balance between security and openness. The NRC has sought to achieve public confidence through a variety of means, but perhaps the most effective tool has been a policy of transparency. We recognize that decisions made behind closed doors may be viewed with suspicion. We have therefore sought to assure open decision processes that would enable the public to be fully informed of the issues before us. We cannot aspire to a world in which all will be satisfied by our decisions, but we have hoped that all would see that our decisions were reached through fair processes.

September 11 has made clear that we need to rethink just how open we can and should be with respect to physical security issues. In this process we must give due regard to two vital but competing interests. The first is the public's right to know, a right that is grounded in law and that is one of the most cherished principles of our democracy. The other is the need to keep sensitive information away from those whose purpose is to destroy that democracy. We are striving to strike an appropriate balance between openness and security.

D. Achieving Progress In Other Agency Business.

The final challenge I would like to mention is the need to accomplish security reform at a time of major transition in the energy sector.

Over the past year or two, we have seen a quiet Renaissance in the nuclear business. The nuclear generating companies have become "leaner and meaner": more efficiently run, with far fewer outages and greater reliability. In the past decade, the average capacity factor, which is a measure of plant utilization, has jumped from 70 percent to nearly 90 percent. Not surprisingly, as the electrical production of the average plant has increased, the cost of the electricity has declined. As a result, the production cost of electricity from nuclear plants is less than that from its principal competitors coal and natural gas. And nuclear is not burdened with the emissions constraints and concerns about global warming that attend fossil fuels. Most importantly, by all objective measures, the safety performance of nuclear plants has improved in parallel with economic performance.

The NRC tracks "significant events" -- safety system failures, unanticipated plant responses, degradation of key systems or components, and operator errors. The number of significant events has declined 99 percent in 15 years. It is not an accident that safety performance and improved economic performance should be linked to

each other: both are furthered by preventive maintenance, better training of operators, and the fostering of a safety culture.

Just a few years ago, some pundits claimed that restructuring in the electricity business would lead to the premature shutdown of nuclear plants. But, as a result of this strong economic and safety performance, we are instead seeing interest among our licensees in expanding their activities. Generating companies are seeking the renewal of the licenses of existing plants so as to allow operation beyond the initial 40-year license term. And some are even contemplating new plant construction.

License renewal involves a careful examination of the systems of the plant that are subject to aging so as to ensure that safety margins are maintained over an extended operating period. We have renewed the licenses for eight plants at four sites already, and either have applications or expect applications from literally the entirety of the remaining 95 plants. We are committed to a thorough, expeditious review of each application.

New construction offers the promise of improvements in both safety and in economics. But new construction presents a significant challenge for many reasons, including that new construction might involve designs that are completely different from existing facilities. For example, there are discussions of reactors that are cooled by helium, rather than water. We have started to prepare for the possibility of new applications so as to ensure that we have the appropriate regulatory and analytical tools in place.

I mention these developments because, even before September 11, the NRC was an agency that was confronting significant challenges. Fortunately, we have used the past quarter century to good advantage, improving our processes and preparing to accommodate technological and economic developments. If society decides to expand reliance on the nuclear option, the NRC is prepared to perform its role of protecting public health and safety.

Conclusion

Let me note in conclusion that we live in very uncertain times and it is difficult at this juncture to predict how the security and other challenges I have mentioned will be finally resolved. I hope that I have left you with the awareness that the NRC takes its obligations very seriously. Thank you for allowing me to join you. I would be happy to respond to questions.