August 12, 1981

Kenneth W. Nauman, Jr.
Plans and Preparedness Division
Federal Emergency Management Agency
211 Main Street
San Francisco, California 94105

In the Matter of
SOUTHERN CALIFORNIA EDISON COMPANY, ET AL.
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos. 50-361 OL and 50-362 OL

Dear Mr. Nauman:

Enclosed is a copy of the "NRC STAFF TESTIMONY ON GUARD CONTENTIONS 2.A, 2.B, 2.C, 2.D, 2.F, 2.G, AND 2.H CONCERNING EMERGENCY PREPAREDNESS FOR THE SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3" which was filed on August 10, 1981.

Also, I have enclosed a copy of the EPZ contention admitted by the Board on the record of August 4, 1981. It is my understanding that FEMA will be primarily responsible for providng testimony on this contention. On August 7, 1981, the Board issued an order modifying the issue concerning earthquakes and emergency planning. A copy of this order is also enclosed. Should you have any questions, please do not hesitate to contact me.

Sincerely,

Donald F. Hassell
Counsel for NRC Staff

Enclosures: As stated

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NRC FORM 318 (10/80) NRCM 0240 OFFICIAL RECORD COPY ☆ USGPO 1980—329-824

August 10, 1981

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
SOUTHERN CALIFORNIA EDISON COMPANY, ET AL.	)	Docket Nos. 50-361 OL 50-362 OL
(San Onofre Nuclear Generating Station, Units 2 and 3)	)	

NRC STAFF TESTIMONY ON GUARD CONTENTIONS 2.A, 2.B, 2.C, 2.D, 2.F, 2.G, and 2.H CONCERNING EMERGENCY PREPAREDNESS FOR THE SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3

In accordance with 10 C.F.R. § 2.743(b), the Atomic Safety and Licensing Board's Order on the record of July 10, 1981, and the stipulation of the parties, the NRC Staff hereby submits its direct testimony on GUARD's emergency planning contentions numbered 2.A, 2.B, 2.C, 2.D, 2.F, 2.G., and 2.H.

Respectfully submitted,

Richard K. Hoefling by DFH

Richard K. Hoefling
Counsel for NRC Staff

Donald F. Hassell

Donald F. Hassell
Counsel for NRC Staff

Dated at Bethesda, Maryland,
this 10th day of August, 1981.

dupl of 8108140454

NOS. 8-13-81
JB

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
SOUTHERN CALIFORNIA EDICSON COMPANY, ET AL.	)	Docket Nos. 50-361 OL 50-362 OL
	)	
(San Onofre Nuclear Generating Station, Units 2 and 3)	)	

TESTIMONY OF JOHN R. SEARS OF THE NRC STAFF ON GUARD CONTENTIONS 2.A, 2.B, 2.C, 2.D, 2.F, 2.G and 2.H RELATED TO EMERGENCY PREPAREDNESS FOR THE SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 and 3

AUGUST 6, 1981

Q.1 State your name and title?

A. John R. Sears. I am a Senior Reactor Safety Engineer in the Emergency Preparedness Licensing Branch, Division of Emergency Preparedness, Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission.

Q.2 Do you have a statement of professional qualifications?

A. Yes. A copy of my statement of professional qualifications is attached to this testimony.

Q.3 What is the purpose of this testimony?

A. The purpose of this testimony is to address Contentions 2.A, 2.B, 2.C, 2.D, 2.F, 2.G and 2.H raised by Intervenors GUARD in this operating license proceeding which are related to the emergency preparedness of the San Onofre Nuclear Generating Station, Units 2 and 3 (SONGS 2 and 3). My testimony will examine the state of the Applicants' emergency preparedness as it affects these GUARD's contentions.

Q.4 GUARD Contention 2 states in part:
Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 & 3, affecting the offsite transient and permanent population, will comply with 10 CFR Sections 50.47 (a)(1) and (b) or (c)(1) as regards:

A. the procedures for notification by Applicants of State and local response organizations, 10 C.F.R. Section 50.47(b)(5), and for notification of and continued communication among emergency personnel by all involved organizations, 10 C.F.R. Section 50.47(b)(6);

B. the means for notification and instruction to the populace within the plume exposure pathway Emergency Planning Zone, 10 C.F.R. Section 50.47(b)(5);

C. the information and the procedures for dissemination of information to the public within the plume exposure pathway Emergency Planning Zone on a periodic basis on how they will be notified and what their initial actions should be in the event of an emergency, 10 C.F.R. Section 50.47(b)(7);

D. the arrangements for medical services for contaminated and injured individuals, 10 C.F.R. Section 50.47(b)(12);

* * * *

F. the capability of each principal response organization to respond and to augment this initial response on a continuous basis, 10 C.F.R. Section 50.47(b)(1);

G. radiological emergency response training to those who may be called on to assist in an emergency, 10 C.F.R. Section 50.47(b)(15);

H. the methods, staffing, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition within the plume exposure pathway EPZ for SONGS 2 & 3, 10 C.F.R. Section 50.47(b)(9);

* * * *

With respect to Contention 2.A, have you examined the procedures for notification by Applicants of State and local response organizations?

A. Yes. The applicant's procedure 1.4 entitled "Notification" provides detailed instructions for contacting offsite agencies. The procedure includes Initial Notification forms for each of the four classes of emergency, an emergency notification call-list, and a follow-up notification form. The procedure implements Emergency Plan Table 5-4 Offsite Response Agency notification and conforms to the criteria of NUREG-0654, E.

Q.5 With respect to Contention 2.A, do the Applicants' procedures for notification of State and local response organizations described in your response to Question 4 above meet planning standard 10 CFR Section 50.47(b)(5)?

A. Yes, as discussed in the pervious answer, the Applicant's procedures conform to the criteria of NUREG-0654 E which are the criteria for implementing the planning standard of 10 CFR 50.47(b)(5).

Q.6 With respect to Contention 2.A, have you examined the Applicants' procedures for notification and continued communication among emergency personnel by all involved organizations?

A. Yes. The Applicants' procedure 1.26 entitled "Communications" describes the communications systems that are available for emergency use, their location and their functions. This procedure is similar to Emergency Plan Table 7-1 and 7-2, and conforms to the criteria of NUREG-0654, F.1. The Applicant's procedure 1.4 Notification includes instructions for follow-up notification. The follow-up notification form is similar in format to the Initial Notification forms but has more extensive technical content. The Applicant's procedures for Site and General Emergencies contain instructions for the periodic dissemination of information on the status of onsite operations and conditions to offsite authorities.

Q.7 With respect to Contention 2.A, do the Applicants' procedures which you have described in your response to Question 6 above meet planning standard 10 C.F.R. Section 50.47(b)(6)?

A. Yes. The implementation of the Applicant's capability for notification and continued communication among emergency personnel was demonstrated during the full-scale exercise involving the applicant and offsite organizations on May 13, 1981 to the extent that the procedures and systems employed during the Unit 1 exercise were similar to those in place for Units 2 & 3. These procedures and systems proved to workable and effective.

Q.8 With respect to Contention 2.B, have you examined the Applicants' means for notification and instruction to the populace within the plume exposure pathway EPZ?

A. Yes, the applicant has designed a siren system in the communities within 10 miles of San Onofre. As of August 1, 1981, 32 of the 40 sirens and the control system had been installed and the total system is scheduled to be operational by September 1, 1981. The Applicant has submitted a map showing siren locations with analytical results of the sound levels anticipated. The purpose of the sirens is to alert the public to tune in to local radio stations for emergency instructions.

Q.9 With respect to Contention 2.B do the means for notification and instruction to the populace within the plume exposure pathway EPZ which you have described in response to Question 8 above meet planning standard 10 CFR Section 50.47(b)(5)?

A. Yes the means for notification and instruction to the populace satisfy the criteria of NUREG-0654, E and Appendix 3 which are the implementation criteria for 10 CFR 50.47(b)(5).

Q.10 With respect to Contention2.C, have you examined Applicants' procedures for dissemination of information to the public within the plume exposure pathway EPZ on a periodic basis as to how the public will be notified and what its initial actions should be in the event of an emergency?

A. Yes, an informational brochure has been mailed to residents of San Clemente, San Juan Capistrano, Capistrano Beach and Dana Point. The document provides a general outline of public notification, sheltering and evacuation procedures, and a detailed map of evacuation routes and location of reception and care facilities. The mailing was preceded by a newspaper advertisement with instructions on how to obtain a copy of the brochure for anyone who may not have received it through the mail. New applicants for electrical service are given complete emergency planning information. A flyer has been printed with similar information for distribution to all park visitors. Emergency response posters have been designed for motels and hotels. The next issue of the telephone directory will have a page of emergency public notification information

and protective action instructions. The total public education program for the plume exposure pathway EPZ is scheduled for full operation by the Fall of 1981. On an annual basis, simplified mailers and newspaper advertisements will remind residents of the emergency planning educational program.

Q.11 Do the Applicants' procedures for dissemination of information which you have described in response to Question 10 above meet planning standard 10 CFR Section 50.47(b)(7)?

A. Yes, the Applicants' procedures for dissemination of information satisfy the criteria of NUREG-0654, G1 and G2, which are the implementation criteria for 10 CFR 50.47(b)(7).

Q.12 With respect to Contention 2.D have you examined arrangements made by Applicants for medical services for contaminated and injured individuals?

A. Yes, the Applicant's emergency procedures 1.8 Emergency Exposure, 1.9 Thyroid Blocking Pills, 1.11 Rescue, and 1.12 Injury described in detail such arrangements. Emergency Procedure 1.12 includes a checklist for Control Room Actions for Personnel injury, instruction for contamination injury treatment and a directional map to egress and a layout for the South Coast Community Hospital. Arrangements have also been made with the Tri City Community Hospital to provide medical assistance for injured and contaminated patients. The Emergency Plan includes Letters of Agreement with local physicians for treating any individual suffering from an injury complicated by radiation contamination as a consequence of activity at San Onofre. In addition, the Applicant has recently signed a contract for training of both onsite and offsite personnel who may be involved with a potentially contaminated and injured person by the Radiation Management Corporation. The Applicant has written agreements with the Scudder Ambulance Company and the Superior Ambulance Company for transporting injured and contaminated personnel. The Emergency Plan at Section 6.5.2 requires that two persons trained in first aid will be onsite at all times.

Q.13 With respect to Contention 2.D do Applicants' arrangements for medical services for contaminated and injured individuals described in your response to Question 12 above, meet planning standard 10 C.F.R. Section 50.47(b)(12)?

A. Yes, the Applicant's arrangements for medical services satisfy the criteria of NUREG-0654, L 1, 2 and 4 which are the implementation criteria for 10 C.F.R. 50.47(b)(12).

Q.14 With respect to Contention 2.F have you examined the Applicants' provisions to respond to an emergency and to augment any initial response on a continuous basis?

A. Yes, Section 5 of the Emergency Plan describes in detail the onsite emergency organization and its augmentation and extension offsite. The Watch Engineer is initially designated as the Site Emergency Coordinator. When an abnormal situation arises, it is his responsibility to determine the classification of the situation and to implement the Emergency Plan. There is continuous 24-hour communication capability between San Onofre and Federal, State and local response organizations to ensure rapid transmittal of accurate notification information and emergency assessment data. The Site Emergency Coordinator has the authority to declare the emergency and to make the necessary notifications and recommendations to offsite authorities. Station staff emergency assignments have been made. Call-out for augmentation of on-shift capabilities would be made immediately upon declaration of the emergency. The Applicant

states that all required personnel would be present within 60 minutes, and qualified personnel necessary to perform the functions listed in NUREG-0654, Table B-1, under capability for 30 minutes, would be present within 30 minutes.

Q.15 With respect to Contention 2.F, does the Applicants' capability to respond to an emergency and to augment this initial response on a continuous basis described in your response to Question 14 above meet planning standard 10 C.F.R. Section 50.47(b)(1)?

A. Yes, the Applicant's capability to respond to an emergency and to augment his staff satisfies the criteria of NUREG-0654, A & B, which are the implementation criteria to meet the planning standard 10 CFR 50.47(b)(1)?

Q.16 With respect to Contention 2.G, have you examined the Applicants' radiological emergency response training provided to those who may be called on to assist in an emergency?

A. Yes, the Applicant's Emergency Plan in Table 8-1 lists the personnel involved and the requirements for both initial and periodic re-training on the scope, responsibilities and functioning of the Emergency Plan and Emergency Implementing Procedures with specific instruction on those aspects applicable to the particular person's responsibility. These areas include emergency response coordination and direction, accident assessment, radiological monitoring, repair and damage control, rescue and first aid. I have been informed by the Applicant that the initial training on the Emergency Plan is in progress and will be completed prior to fuel loading. In

addition, the Applicant has described to me the training provided through the Applicant's support by the Radiation Management Corporation for over 300 personnel from offsite organizations, including physicians and hospital emergency room personnel, ambulance personnel, police and firemen.

Q.17 With respect to Contention 2.G, does the radiological emergency response training provided by the Applicants which you have described in response to Question 16 above meet planning standard 10 C.F.R. Section 50.47(b)(15) ?

A. Yes, the radiological emergency response training provided by the Applicants satisfies the criteria of NUREG-0654, O which are the implementation criteria to meet the planning standard of 10 CFR 50.47(b)(15).

Q.18 With respect to Contention 2.H, have you examined the methods, staffing, systems and equipment available to Applicants for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition within the plume exposure pathway EPZ for SONGS 2 and 3?

A. Yes, radiological monitoring systems to monitor radioactivity levels in all of the important process and effluents points are described in Section 11.5 of the PSAR. Additional listings of equipment available at the station for both initial and continuing assessment of emergency situations are in Tables 7-3 through 7-7 and Appendix D of the Emergency Plan.

The Applicant is training the Health Physics Shift Foreman to perform dose assessments. There are at least 2 Senior Health Physics technical personnel, qualified to perform dose assessments, whose driving time from home to San Onofre is less than 30 minutes.

The Applicant's Emergency Implementation Procedure 1.22, Emergency Dose Projections - Airborne Release, for Unit 1 is presently under study and revision to apply to Unit 2 and 3. Hand calculations are employed in this procedure. The Applicant is installing a Health Physics computer system which will process meteorological data and data from radiation monitors to calculate dose at various distances from the plant. This automated system is scheduled to be fully operational by July 1982 and will be available for connection to offsite authorities.

Q.19 Do the methods, staffing, systems and equipment, available to Applicants for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition described in your response to Question 18 above meet planning standard 10 C.F.R. Section 50.47(b)(9)?

A. Yes, the methods, staffing, systems and equipment for monitoring releases and assessing consequences satisfy the criteria of NUREG-0654, I which are the implementation criteria to meet the planning standard of 10 C.F.R. 50.47(b)(9).

Q.20 What is your assessment of the Applicant's capability to implement the procedures and activities which you have described in this testimony?

A. I have reviewed the implementing procedures and, in my judgment, they provide adequate and clear direction to the person called upon to implement them. The Applicant has an ongoing training program which I have examined and found acceptable. This training program provides assurance that the procedures will be followed. Additional confirmation of the Applicant's ability to implement the emergency preparedness program is provided through the Office of Inspection and Enforcement's Emergency Preparedness Appraisal Program (EPAP) which is an onsite inspection and verification process, and the conduct, by the Applicant of an onsite exercise, both of which are scheduled far before the time expected for issuance of the operating license for San Onofre 2 & 3.

JOHN R. SEARS

RESUME'

Prior to 1952, I was employed in field jobs in various aspects of mechanical engineering. In 1952, I joined Brookhaven National Laboratory as a Reactor Shift Supervisor on the Brookhaven Graphite Reactor. While at Brookhaven, I completed a series of courses given by the Nuclear Engineering Department in nuclear engineering. These courses were patterned on the ORSORT programs. In 1956, I was appointed Project Engineer on the Brookhaven Medical Research Reactor. I was a member of the design group, participated in critical design experiments, wrote specifications, coauthored the hazards report, was responsible for field inspection and contractor liaison, trained operators and loaded and started up the reactor. About three months after start-up, in 1959, following the successful completion of proof tests and demonstration of the reactor in its design operating mode for boron capture therapy of brain cancer, I accepted a position as reactor inspector with the Division of Inspection, U. S. Atomic Energy Commission. In 1960, I transferred, as a reactor inpsector, to the newly-formed Division of Compliance. I was responsible for the inspection, for safety and compliance with license requirements, of the licensed reactors and the fuel fabrication and fuel processing plants. which use more than critical amounts of special nuclear material, in the Eastern United States.

In September 1968, I transferred to the Operational Safety Branch, Directorate of Licensing. My responsibility included development of appropriate guides for evaluation of operational aspect of license applications and staff assistance in review of power reactor applicants submittals in the areas of Organization and Management. Personnel Qualifications, Training Programs, Procedures and Administrative Control, Review and Audit, Start-up Testing Programs Industrial Security and Emergency Planning.

The Branch was reorganized as the Industrial Security and Emergency Planning Branch in April 1974 to place increased emphasis and attention upon areas of physical security and emergency planning.

In 1976 I transferred to the Divison of Operating Reactors as the sole reviewer responsible for review of emergency planning for all the operating reactors in the United States.

New York City College, 1950 - Mechanical Engineering

Argonne International School of Reactor Technology, 1961 - Reactor Control Course

GE BWR System Design Course, 1972

Popo-U.S. Army, 1974 - Course in Industrial Defense and Disaster Planning

Instructor at DCPA , 1976, 1977 - Course in Emergency Planning

Director, 1962 - Reactor Program, Atoms for Peace Exhibit, Bangkok, Thailand

Director, 1966 - Atoms for Peace Exhibit, Utrecht, Holland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
SOUTHERN CALIFORNIA EDISON COMPANY, ET AL.	)	Docket Nos. 50-361 OL 50-362 OL
	)	
(San Onofre Nuclear Generating Station, Units 2 and 3)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF TESTIMONY ON GUARD CONTENTIONS 2.A, 2.B, 2.C, 2.D, 2.F, 2.G, AND 2.H CONCERNING EMERGENCY PREPAREDNESS FOR THE SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class or as indicated by a double asterisk by express delivery service or as indicated by an asterisk by deposit in the Nuclear Regulatory Commission internal mail system, this 10th day of August, 1981:

*James L. Kelley, Esq., Chairman
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Administrative Judge
c/o Bodega Marine Laboratory
University of California
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*Atomic Safety and Licensing Appeal Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

*Secretary
U.S. Nuclear Regulatory Commission
ATTN: Chief, Docketing & Service Branch
Washington, D.C. 20555

Donald F. Hassell

Donald F. Hassell
Counsel for NRC Staff

EPZ CONTENTION ADMITTED BY ASLB ORDER ON
THE RECORD OF AUGUST 4, 1981 (TR. 6803)

The emergency response plans fail to meet the requirements of 10 C.F.R. § 50.47(c)(2) because local emergency planning officials have arbitrarily established the boundaries of the Plume Exposure EPZ in that they have mechanically applied a 10 mile boundary and that the Interagency Agreement (IAEP) among all local jurisdictions defines the EPZ by drawing compass lines on a map of the area. In determining the exact size of the EPZ, emergency planning officials have failed to consider the following local conditions:

1. topography
2. meteorology
3. evacuation routes
4. demography
5. jurisdictional boundaries
6. SAI report
7. land characteristics

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

BEFORE ADMINISTRATIVE JUDGES
James L. Kelley, Chairman
Elizabeth B. Johnson
Cadet H. Hand

In the Matter of SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. (San Onofre Nuclear Generating Station, Units 2 and 3)	Docket Nos. 50-361-OL 50-362-OL August 7, 1981

ORDER
(Modifying an Issue Concerning
Earthquakes and Emergency Planning)

At the time of our filing of July 29, 1981, the Board had in hand the June 11, 1981 memorandum to it from Darrell G. Eisenhut of the NRC Staff. That memorandum transmitted to us a copy of the May 13, 1981 letter from Robert L. Tedesco of the NRC Staff to Mr. Robert Dietch and Mr. D. W. Gilman (Vice-Presidents of Southern California Edison Company and San Diego Gas and Electric Company, respectively). That letter set forth in detail the Staff's view of the matters to be considered by the Applicants concerning the evaluation of the effect of earthquakes on their emergency plans. Specifically, the Board noted that the Applicants were told, "For purposes of this evaluation, as a planning basis you may assume that the plant experiences earthquake effects no more severe than the Safe Shutdown Earthquake." The Board Order of July 29, 1981 stated our reasons for postulating an earthquake in excess of the SSE and we are not swayed from that position.

We have listened to oral arguments concerning our Order and have received written memoranda from the parties. Our concerns still focus upon the questions we raised in the Order, namely, "What steps could be taken by the Applicants and responding jurisdictions to carry out evacuation in a timely manner and/or protect those in the EPZ pending evacuation" following a damaging earthquake.

It now appears, however, that the Board order of July 29, 1981 may have posed such severe consequences resulting from the hypothesized earthquake that evacuation and/or protection of those in the EPZ would be virtually impossible. That was not our intention. The Board's intent was a site specific inquiry to examine the impact of a major earthquake, accompanied by a radioactive release, upon the emergency plans. The Board does not know what magnitude earthquake would be required to cause a "breach of containment" and "collapse of bridges and overpasses and surface breaks rendering the highways temporarily impassable." We therefore present the following revised issue:

> Assume a major earthquake in the SONGS area. This assumed earthquake causes extensive structural damage to the facility, to communications, to highways designated as evacuation routes, and is accompanied by radiological releases requiring evacuation in the plume exposure pathway of the EPZ. In those circumstances what steps could be taken by the applicants and responding jurisdictions to carry out evacuation in a timely manner and/or protect those in the EPZ pending evacuation? What federal resources, including military resources, could be brought in to assist in this situation, and how would federal assistance be accomplished?

In posing the foregoing the Board wishes to learn what the physical consequences of earthquakes, in a scale of increasing severity beyond the SSE, would be upon the emergency plans as they relate to communications and evacuations up to some presumed point where evacuation would become a physical impossibility in any reasonable time frame. A point of beginning should relate to the presumed consequences of an SSE magnitude earthquake upon evacuation and the necessary related communications and highways. Pursuant to the Staff's earlier instructions, planning for such an earthquake presumably either is complete or in progress. Sequentially, from that level of planning, we wish to examine the presumed consequences of a series of increasingly more severe earthquakes as they relate to the emergency plans. Our questions are designed only to test the adequacy of the emergency plans and to determine whether there is reasonable assurance that adequate protective measures can and will be taken at SONGS in the event of a major earthquake accompanied by radiological releases severe enough to initiate the emergency evacuation plan.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

James L. Kelley, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland

this 7th day of August 1981.

cc: Chairman Palladino
Commissioner Gilinsky
Commissioner Bradford
Commissioner Ahearne
Leonard Bickwit, Jr., GC