



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 17, 1986

MEMORANDUM FOR: Chairman Zech
Commissioner Roberts
Commissioner Asselstine
Commissioner Bernthal
Commissioner Carr

FROM: Carlton Kammerer, Director
Office of Congressional Affairs

SUBJECT: HOUSE INTERIOR COMMITTEE ORDERS H.R.5192 REPORTED

The House Interior Committee today ordered reported H.R.5192, "The Nuclear Power Emergency Response Data System Act of 1986". Three amendments offered by the principal sponsor, Mr. Huckaby (D-LA), were agreed to during the markup session. The amendments, attached, would:

1. Clarify the intent that no other entity would supersede the Federal government in providing an emergency response system;
2. Make clear that NRC does not have the authority to intervene in plant operations or relieve a utility of responsibility to maintain his reactor in a safe operating condition; and
3. Make funding for the establishment and operation of the emergency response system subject to normal existing NRC appropriations.

Future action on the bill is not known at this time. Absent separate Rules Committee approval for floor consideration, the bill could be offered as a floor amendment to an appropriate bill in the House.

Attachment:
As stated

cc: EDO
OGC
SECY



OFFICE OF THE
CHAIRMAN

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

May 10, 1985

The Honorable Alan Simpson, Chairman
Subcommittee on Nuclear Regulation
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

The FY 1984-85 NRC Authorization Act stipulated that the Commission consider four issues in its efforts to upgrade its technical data acquisition capabilities for response to emergencies at licensed nuclear power plants:

- "(A) the appropriate role of the Commission during abnormal conditions at a nuclear reactor licensed by the Commission;
- (B) the information which should be available to the Commission to enable the Commission to fulfill such role and to carry out other related functions;
- (C) various alternative means of assuring that such information is available to the Commission in a timely manner; and
- (D) any changes in existing Commission authority necessary to enhance the Commission response to abnormal conditions at a nuclear reactor licensed by the Commission."

The Commission has carefully considered and resolved each of these issues. The enclosed materials provide a description of these considerations and the conclusions reached.

These materials are being provided to each of the Congressional committees with oversight responsibilities for NRC.

Sincerely,

Original signed by
Nunzio J. Palladino

Nunzio J. Palladino
Chairman

OCM
N. HALLER
5/ /85

OCM
N. PALLADINO
5/ /85

Enclosures:
Responses to Issues Delineated in
FY 1984-85 NRC Authorization Act

Correspondence cleared with
Comrs' Offices by C/R
Ref: CR-85-32.

TO	CC w/enclosures: Senator Gary Hart	IE	C/R	OCA	OCM	OCM
BY	JHickman	SShowman	S/C	WAGNER	PJPOLK	
DATE	5/8/85	5/8/85	5/8/85	5/8/85	5/8/85	5/8/85

Identical letters to be sent to:

The Honorable Morris K. Udall, Chairman
Subcommittee on Energy and the Environment
Committee on Interior and Insular Affairs
United States House of Representatives
Washington, D. C.

cc: Rep. Manuel Lujan

The Honorable Edward J. Markey, Chairman
Subcommittee on Energy Conservation and Power
Committee on Energy and Commerce
United States House of Representatives
Washington, D. C. 20515

RESPONSES TO ISSUES DELINEATED IN FY 1984-85
NRC AUTHORIZATION ACT

- (A) "The appropriate role of the Commission during abnormal conditions at a nuclear reactor licensed by the Commission."

The revised role of this agency during a nuclear emergency has been defined in NUREG-0728, revised, which was forwarded to the Congress in February 1983. Briefly, the agency's role is fourfold. The NRC monitors the licensee to ensure that appropriate recommendations are being made with respect to offsite protective actions. The NRC informs other Federal agencies and entities and in coordination with other public affairs groups, informs the news media of the NRC's knowledge of the situation. The NRC provides advisory support to the licensee and State and local authorities, including confirming the licensee's recommendations to offsite authorities. Finally, in some rare and unusual situations, the NRC may find it necessary to intervene by providing limited direction to the licensee.

The Commission believes that this role can best be fulfilled by sending a team of experts to the site of an emergency, with the Headquarters Operations Center providing the initial response during the 2 to 6 hours that the Site Team is in transit and providing support and analysis to the Site Team once it arrives.

- (B) "The information which should be available to the Commission to fulfill such role and to carry out other related functions."

A list of parameters has been compiled and subjected to limited testing to evaluate its value in enabling the Commission to fulfill its designated role. This data set is designed to provide sufficient knowledge of (1) reactor coolant system conditions to assess the likelihood or extent of core damage, (2) containment building conditions to assess the likelihood of its failure, (3) radioactivity releases to assess the immediacy and degree of public danger, and (4) meteorological conditions to assess the distribution of potential or actual impacts on the public. The lists of parameters for Pressurized Water Reactors and Boiling Water Reactors are provided in Tables 1 and 2, respectively.

- (C) "Various alternative means of assuring that such information is available to the Commission in a timely manner."

The Commission staff considered five options for acquiring this data. These were:

1. A fully automated system for direct acquisition of data from plant sensors and transmission in standard format to NRC (this is a scaled down version of the Nuclear Data Link (NDL) concept, addressing only the new data list).
2. A licensee initiated transmission of selected parameters from existing electronic data systems, which have been provided by the licensees for their own emergency response facilities.
3. A computer terminal at each site for manual entry of manually acquired data that would be transmitted electronically to the Operations Center in a standard format.
4. A telefax system for transmitting image facsimile of manually compiled data sheets.
5. An upgraded voice link, employing specially trained and qualified personnel as communicators.

Criteria for comparing these options were developed from problems encountered during the agency's response to events and exercises and from previous criticism of the NDL concept. These criteria involve accuracy, reliability, timeliness, completeness, costs (in dollars and expert personnel), and backfitting requirements. These criteria have been more specifically delineated in Table 3. The five options have been compared against these criteria in Tables 4a through 4e, and the comparisons are summarized in Table 5.

On the basis of these considerations, the Commission staff has determined that the second option enumerated above provides the most appropriate means to support its emergency response role. Because of the emphasis on utilizing the electronic data systems already being developed by the licensees for their own emergency response facilities, this option has been named the Emergency Response Data System (ERDS).

Under the ERDS concept, an electronic transmission system would be individually fashioned for each site. It would accept from the licensee's electronic information system(s), in the licensee's format, those parameters that are on the NRC's emergency data list. During declared emergencies, the ERDS would be activated by the licensee to begin transmissions to the Operations Center. Because the role performed by the licensees at their emergency response facilities (in particular their Emergency Operations Facilities, EOF) is similar to the role of the NRC during emergencies, the licensees' data systems already include most of the parameters desired by NRC. Those few parameters that are not included on a particular licensee's system can be communicated by voice over the existing Emergency Notification System (ENS), thus avoiding requirements on that licensee to backfit the data system to include those parameters.

With the cooperation and assistance of the Duke Power Company, the ERDS concept was tested in a limited exercise during July 1984. Electronic data transmissions from the McGuire plant were provided by Duke's "Crisis Management Data Transmission System," utilizing a data list specifically restricted to parameters on NRC's emergency data list. This exercise demonstrated that there is great value in using electronic data transmission to obtain a very modest set of reliable, time-tagged data at modest frequency. NRC's assessment activities were initiated sooner and progressed more rapidly throughout the exercise. Data errors were eliminated. The Reactor Safety Team and the Protective Measures Team exhibited major improvement in their abilities to focus on the significant factors and to predict the course of the events relevant to protecting the public. Questions addressed to the licensee were better focused, and the burden on the licensee's telephone communicator was substantially reduced.

If the implementation of the ERDS concept makes a new regulatory requirement necessary then, prior to implementation of any new requirement, the concept would be developed further and made available for comment in accordance with NRC's rulemaking procedures.

- (D) "Any changes in existing Commission authority necessary to enhance the Commission response to abnormal conditions at a nuclear reactor licensed by the Commission."

The Commission does not require any changes to its existing statutory authority in order to properly respond to abnormal conditions at licensed nuclear reactors. The role, as detailed in NUREG-0778, revised, is well within the Commission's authorities under the Atomic Energy Act, as amended. The Commission has authority under the Atomic Energy Act of 1954, as amended, to potentially direct all safety-related aspects of operation during an emergency. Under the existing regulatory framework, licensees are primarily responsible for ensuring safe operation of their facilities. However, the Commission has the authority to order a licensee during an emergency to take any number of possible protective actions, ranging from obtaining NRC concurrence before the licensee takes certain actions to taking specific Commission-ordered actions to permitting actual operation of the facility by the Commission. The legal basis for ordering the licensee to take certain actions stems from Section 161 of the Atomic Energy Act, as amended (42 U.S.C. § 2201), which authorizes the Commission to issue orders governing the use of radioactive material and operation of nuclear facilities. Section 186c of the Atomic Energy Act, as amended (42 U.S.C. § 2236(c)), authorizes the Commission "[i]n cases found by the Commission to be of extreme importance... to the health and safety of the public" to "enter upon and operate the facility prior to any of the procedures provided under the Administrative Procedure Act."

The reference to the Administrative Procedure Act in Section 186c is to the general rule applicable to all NRC orders that, in ordinary circumstances, the Commission is required to afford the licensee notice and an opportunity to be heard before the licensee is bound to take the ordered action. Notwithstanding the general requirement that a licensee be given a prior opportunity to be heard, the Commission has the authority to issue orders that are effective upon issuance to require a licensee to take certain actions in circumstances compelling immediate action to protect public health and safety. See Administrative Procedure Act § 9(b), 5 U.S.C. § 558(c); 10 CFR 2.202(f) and 2.204. The use of immediately effective orders must be justified by the emergency nature of the situation and by an overriding need to protect public health and safety by immediate action.

Notwithstanding this broad authority, the Commission has decided that its role during an emergency at a nuclear power plant should be limited to the functions discussed under Question A above. This role emphasizes the licensee's responsibility to operate its facility in a manner so as to protect the public health and safety, and it emphasized the NRC's responsibility to closely monitor the licensee's actions to assure that the public health and safety is being protected to the best extent possible during abnormal situations.

TABLE 1
PWR PARAMETER LIST

Primary Coolant
System

Pressure
Temperatures - hot leg
Temperatures - cold leg
Temperatures - core exit thermocouples
Subcooling margin
Pressurizer level
RCS charging/makeup flow
Reactor vessel level (when available)
Reactor coolant flow
Neutron flux - startup range

Secondary Coolant
System

Steam generator levels
Main feedwater flows
Auxiliary/Emergency feedwater flows

Safety Injection

High pressure safety injection flows
Low pressure safety injection flows
Safety injection flows (Westinghouse)
Borated water storage tank level

Containment

Containment pressure
Containment temperatures
Hydrogen concentration
Containment sump levels

Radiation Monitoring
System

Reactor coolant radioactivity
Containment radiation level
Condenser air removal radiation level
Effluent radiation monitors
Process radiation monitor levels

Meteorological

Wind speed
Wind direction
Atmospheric stability

TABLE 2
BWR PARAMETER LIST

Primary Coolant
System

Reactor pressure
Reactor vessel level
Feedwater flow
Neutron flux - startup range

Safety Injection

RCIC flow
HPCI/HPCS flow
Core spray flow
LPCI flow
Condensate storage tank level

Containment

Drywell pressure
Drywell temperatures
Hydrogen and oxygen concentration
Drywell sump levels
Suppression pool temperature
Suppression pool level

Radiation Monitoring
System

Reactor coolant radioactivity level
Primary containment radiation level
Condenser off-gas radiation level
Effluent radiation monitor
Process radiation levels

Meteorological

Wind speed
Wind direction
Atmospheric stability

TABLE 3
CRITERIA FOR IMPROVING TECHNICAL DATA ACQUISITION

- Accuracy
 - Minimize errors in acquiring data from plant sensors
 - Minimize errors in transmitting data to Operations Center
- Reliability
 - Availability for prompt implementation upon occurrence of an event
 - Dependability of routine updating
- Timeliness
 - Minimize delay initiating data transmission
 - Minimize time elapsed between data acquisition and availability in Operations Center
- Completeness
 - Obtain sufficient number of parameters
 - Maintain associations of time and source among various data
- Cost
 - Obtain favorable cost-benefit comparison with other alternatives
- Personnel Requirements
 - Minimize number of technical experts needed to operate system
- Backfitting Requirements
 - Minimize requirements on licensee and intrusion to plant systems

TABLE 4a
CONSIDERATIONS FOR FULLY AUTOMATED
SYSTEM TAKING DATA FROM PLANT SENSORS
(NUCLEAR DATA LINK)

- Accuracy is excellent because there are no human interfaces.
- Reliability is excellent because there are no human interfaces.
- Timeliness is excellent because system is immediately available and capable of rapid transmission with frequent updating.
- Completeness is potentially excellent because any necessary parameter can be accessed.
- Cost is high because a totally new system must be developed for each plant.
- No personnel are required for acquisition, transmission, or receipt of data.
- Backfitting requirements would be extensive on licensees for equipment at plants.

TABLE 4b
CONSIDERATIONS FOR AUTOMATED
SYSTEM ACCESSING LICENSEES'
EXISTING ELECTRONIC
DATA SYSTEMS
(EMERGENCY RESPONSE DATA SYSTEM)

- ° Accuracy is excellent because there are no human interfaces.
- ° Reliability is excellent because there are no human interfaces, and many systems such as Safety Parameter Display System (SPDS) will incorporate automatic data validation.
- ° Timeliness is excellent because the system is immediately available and capable of rapid transmission with frequent updating. Promptness of initiation may vary depending upon licensees' system configurations. In some cases, activation may not occur until the licensee mans its technical support center.
- ° Completeness is expected to be generally excellent because the primary objective of the SPDS requirement is to provide the licensee with a tool for quickly assessing the overall health of the plant; i.e., the same need that the NRC faces. It is expected that there would be minimal requests for supplemental information to be transmitted by voice.
- ° Cost is relatively low because most licensees are already installing systems to transmit data among their own Emergency Response Facilities (ERFs), but there will be substantial hardware and software interface requirements at the Operations Center to receive the diverse signals and formats.
- ° No personnel are required for acquisition, transmission, or receipt of data on SPDS. Supplemental voice transmissions are not expected to overburden existing voice links.
- ° Backfitting on plant systems would be minimal in that licensees only would have to provide one additional output port on the SPDS or other ERF data system.

TABLE 4c
CONSIDERATIONS FOR MANUAL DATA
ACQUISITION AND TERMINAL ENTRY
FOR ELECTRONIC TRANSMISSION

- Accuracy is poor because manual data acquisition and encoding is subject to instrument reading errors, handwriting reading errors, and typographical errors.
- Reliability is poor because manual data acquisition is easily interrupted. Initiation would not be prompt because of personnel requirements.
- Timeliness is only fair because acquisition and entry are time consuming, but data handling thereafter at NRC is automatic. Data verification could cause more extensive delays.
- Completeness is potentially good, but acquisition time may limit number of parameters that can be handled.
- Costs are modest, including at least a terminal and a modem for each reactor.
- Personnel requirements include at least one person knowledgeable in plant operations to acquire data and one technical typist to enter data on a terminal. Verification of data would require at least one highly expert individual.
- Backfitting of plant equipment would not be required.

TABLE 4d
CONSIDERATIONS FOR A SYSTEM TO
TELEFAX MANUALLY ACQUIRED DATA TO NRC

- Accuracy is poor because manual data acquisition and entry (at NRC) is subject to instrument reading errors, handwriting reading errors, and typographical errors. Verification would be difficult because typist would not be in room with plant personnel.
- Reliability is poor because manual data acquisition is easily interrupted. Initiation may not be prompt because of personnel requirements.
- Timeliness is only fair because acquisition and entry are time consuming, but data handling thereafter at NRC is automatic. Data verification would require return telefax and more delay.
- Completeness is potentially good, but acquisition time may limit number of parameters that can be handled.
- Costs are modest, including a compatible telefax in each control room.
- Personnel requirements include one person knowledgeable in reactor operations to acquire data and one NRC employee to enter data.
- Backfitting to plant systems is not required.

TABLE 4e
CONSIDERATIONS FOR A SYSTEM USING
MANUAL ACQUISITION AND VOICE TRANSMISSION

- ° Reliability is poor because manual data acquisition may be easily interrupted. Initiation would not be prompt because of personnel requirements.
- ° Accuracy has been shown to be marginal for voice relay of data. Detection of instrument reading errors, handwriting reading errors, and typographical errors (at NRC) would depend on voice link readback for detection and correction.
- ° Timeliness has been shown to be marginal because manual data acquisition and voice relay is too slow to transmit required data.
- ° Completeness is poor because transmission time requirements seriously limit number of parameters that can be handled. Source and time reference have been demonstrated to be difficult to maintain with data relayed by voice.
- ° Costs are not incurred unless additional telephone links are utilized to increase data transmission/verification rate.
- ° Personnel requirements include an individual knowledgeable in plant operations to acquire data at the site and one technical typist to enter data at NRC. Additional telephone lines would require pairs of additional communicators.
- ° Backfitting would not be required.

TABLE 5
COMPARISON OF OPTIONS

<u>OPTIONS</u>	<u>ACCURACY</u>	<u>RELIABILITY</u>	<u>TIMELINESS</u>	<u>COMPLETENESS</u>	<u>COST</u>	<u>EXPERT PERSONNEL</u>	<u>BACKFIT</u>
Nuclear Data Link	Excellent	Excellent	Excellent	Excellent	High	None	Extensive for Sensor Readouts
Emergency Response Data System	Excellent	Excellent	Excellent*	Excellent	Moderate	None	Minor for SPDS Output
Manual Terminal At Site	Poor	Poor	Fair But Not Prompt	Limited by Time	Moderate	Operations Specialist	None
Telefax	Poor	Poor	Fair But Not Prompt	Limited by Time	Moderate	Operations Specialist	None
Qualified Voice Communicators	Marginal	Poor	Marginal	Limited by Time	None	Operations Specialist	None

*Note: Activation time may vary depending upon licensees' equipment configurations. In some cases, activation may not occur until the licensee mans its Technical Support Center.

50-440/441-OL

STATE OF OHIO
OFFICE OF THE GOVERNOR
COLUMBUS 43266-0601

87 JAN 27 P4:21

January 14, 1987

Lando W. Zech, Chairman
Nuclear Regulatory Commission
Washington, DC 20555

SERVED JAN 23 1987

Dear Chairman Zech:

As you recall, in August, 1986, I wrote to inform you that I had withdrawn my support from Ohio's plan for responding to emergencies at nuclear power plants because of my concerns about the adequacy of the plan to protect Ohioans.

I appointed a Cabinet level group to re-evaluate the adequacy of the plan. The Emergency Evacuation Review Team has completed its review, and I am pleased to provide you with a copy of its report. I am in full agreement with the report's conclusions and recommendations.

The report concludes that the current emergency response plan is inadequate and, as a result, I have decided to pursue every legal and administrative action possible to compel Perry and Davis-Besse to operate at low-power until the deficiencies in the plan are corrected.

In the meantime, I would hope that the Nuclear Regulatory Commission would reassess its position and not allow these plants to operate above low-power in the absence of an adequate emergency response plan.

The report also raises serious questions about the basic assumptions underlying current emergency response planning standards. I intend to work with my colleagues and with Congress to create a national blue-ribbon commission of independent experts to investigate the potential for severe accidents, review the existing standards for containment safety, and evaluate the lessons of Chernobyl for U.S. reactor safety and emergency response.

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Lando W. Zech
January 14, 1987
Page two

I hope that we will be able to discuss these issues soon.

Sincerely,

Richard F. Celeste
Governor

RFC/fj

cc: Commissioner James Asselstine
Commissioner Frederick Bernthal
Commissioner Kenneth Carr
Commissioner Thomas Roberts

REPORT OF THE EMERGENCY EVACUATION REVIEW TEAM
ON EMERGENCY RESPONSE PLANS FOR THE PERRY AND
DAVIS-BESSE NUCLEAR POWER PLANTS

Submitted to Governor Richard F. Celeste
January 7, 1987

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William Denihan, Chairman
Director, Department of Highway Safety

Thomas Chema
Chairman, Public Utilities Commission

MG Raymond Galloway
Adjutant General r

January 6, 1987

The Honorable Richard F. Celeste
Governor, State of Ohio
Statehouse
Columbus, OH 43215

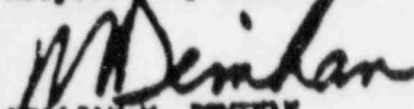
Dear Governor Celeste:

On behalf of the Emergency Evacuation Review Team, members Thomas Chema, P.U.C.O. Chairman; Raymond Galloway, Adjutant General; and myself acting as Chairman, the E.E.R.T. report findings and recommendations are submitted to you for your review and consideration.

Earlier today we met with utilities officials, county officials and other interested parties to advise them of E.E.R.T.'s report. We will continue to meet with the public and news media to fully explain the report, findings and recommendations.

Finally, I'd like to pay a special thanks to Gary Holland, Paul Ryder, Ed Hopkins and Jeff McCourt of the Governor's Office and Sharon Sigler of the Attorney General's office for their outstanding efforts in providing the support, input, assistance and research skills in the preparation and completion of this document.

Respectfully submitted, .



WILLIAM M. DENTON
Chairman of E.E.R.T.
Director, O.D.H.S.

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INTRODUCTION

Since August 15, 1986, when you withdrew State support for The Ohio Plan for Response to Radiation Emergencies at Licensed Nuclear Facilities, the Emergency Evacuation Review Team (EERT) has conducted an intensive study of the adequacy of the emergency response plan to protect the public. This report contains the conclusions of our study and our recommendations.

At the outset, it is important to note that we undertook this review within the context of a national policy to accept and promote the use of nuclear technology to produce energy. Therefore, the EERT expresses no opinion as to whether the inherent dangers associated with nuclear energy are so significant as to justify a rethinking of that national policy.

The EERT held two well-attended public meetings in early September, one at Lakeland Community College, near the Perry Nuclear Power Plant, and the other at an Oak Harbor public school, near the Davis-Besse Nuclear Power Station. The purpose of these meetings was to hear the suggestions and concerns of people who live near the plants.

Following the public meetings, we met with numerous experts; representatives from Toledo Edison and the Cleveland Electric Illuminating Company; nuclear energy specialists from Brookhaven Institute, Ohio State University and the American Nuclear Society; the Sunflower Alliance and the Toledo Safe Energy Coalition, groups that oppose Perry and Davis-Besse; the Ohio Association of Public School Employees, which represents bus drivers; County Commissioners and representatives of county agencies who developed the local emergency response plans; and state agency employees responsible for developing the State plan. We also attended public meetings and met with many private citizens.

The EERT testified before the NRC in Washington concerning the full power license for the Perry plant on September 4. On October 28, the EERT attended a day-long informational meeting in Washington with representatives of the Federal emergency Management Agency (FEMA) and the Nuclear Regulatory Commission (NRC), and both NRC Commissioner James Asselstine and James Keppler, the NRC Regional Administrator came to Columbus on separate occasions to meet with the EERT.

Because the NRC did not respect your request to withhold approval for full power licenses until the EERT had completed its re-evaluation of the emergency response plans, Ohio has sought to delay full power operation through the courts. The EERT's preliminary findings and conclusions became an important part of that effort. Appendix A is a summary of the State's legal efforts to postpone full power operation until the completion of this re-evaluation.

CONCLUSIONS AND RECOMMENDATIONS

We have concluded that the current emergency response plan for Ohio's nuclear power plants is inadequate to protect the public and that the premise for planning may be based on unduly optimistic assumptions about the likelihood and consequences of nuclear accidents.

Our findings are divided into two parts. The first consists of objective evidence of deficiencies in the existing plan and recommendations for improving the plan. The second concerns the fundamental assumptions on which the plan is based and our recommendations for establishing emergency response measures to take into account the possibility of a sudden release of large amounts of radiation.

I. DEFICIENCIES IN THE EXISTING PLAN

A. FINDINGS

1. The Willingness and Ability of Bus Drivers to Perform Assigned Functions: Trained people are essential for transporting school children and others in need of transportation during an emergency. Although the plan assumes the participation of large numbers of public school bus drivers, the drivers have indicated through their union that they are unwilling to participate under existing conditions.

The Ohio Association of Public School Employees union, which represents bus drivers, has voted overwhelmingly not to participate in evacuation procedures at Perry and Davis-Besse. Most bus drivers have not volunteered for this duty, but have been volunteered by their employers. According to bus drivers who spoke at our public hearings and their union representatives, few drivers themselves have made a personal commitment to participate in the plan. Moreover, the drivers have complained of a lack of training, inadequate protection from radiation exposure, and uncertainties about their potential liability.

2. **Evacuating Special Populations:** Additional time, specially trained personnel and specialized equipment would be needed to evacuate hospital patients, nursing home residents, and physically and mentally handicapped individuals. Information about the location and special needs of the handicapped is essential.

A brief, informal EERT survey found many handicapped individuals who said that, to the best of their knowledge, no special provisions had been made for their evacuation. On that basis, the EERT concluded that there is no comprehensive list of all those individuals who may be in need of special assistance. Because the plan is based on incomplete knowledge of the numbers of handicapped people, the EERT has concluded that sufficient resources are unavailable within the immediate area to evacuate them.

3. **Capability of Area Hospitals to Treat Victims of Radiation Exposure:** Area hospitals lack the necessary equipment and sufficient numbers of properly trained personnel to treat large numbers of radiation victims. In addition, these hospitals have not been subjected to comprehensive on-site evaluations and their radiological emergency plans have not been adequately tested, according to Ohio Department of Health personnel who have been involved in the planning and exercises.

The plan's listing of the number of beds in area hospitals has no relationship to that hospital's ability and willingness to treat radiological patients. The United States Court of Appeals, District of Columbia Circuit, has invalidated this methodology for planning arrangements for medical services for contaminated injured individuals. The plan has not been changed to reflect recent NRC and FEMA guidance.

Past exercises of the plan have tested the ability of a hospital to treat a single contaminated patient, as if that were a realistic demonstration of a hospital's ability to cope with the results of a nuclear accident. While the hospitals have performed well in this limited test, it does not provide adequate assurance that they are prepared for a larger number of radiation victims.

4. Notification of the Public in Case of Emergency: The EERT is dissatisfied with the execution and testing of the plan's provisions for notifying the public of failures at nuclear reactors. At our public hearings in Lake and Ottawa counties, many citizens complained that they have not been able to hear the sirens during tests. Current plans do not provide an adequate level of protection for hearing-impaired individuals. We doubt that the door-to-door notification called for in the plan could be effective in alerting the public, particularly in bad weather.

5. **Planning for Recovery and Re-entry:** The emergency response plan assumes that contaminated areas could be re-occupied safely within a matter of days and therefore addresses recovery, re-entry and relocation issues in a summary manner. This segment of the plan clearly fails to take into account the possibility of a significant release of radiation.

In addition to this fundamentally flawed assumption, these elements of the plan have not been exercised, and recent draft U.S. EPA guidance on these issues has not been incorporated, according to Ohio Department of Health personnel involved in emergency response planning.

6. **Decontamination and Waste Disposal:** These issues are also summarily addressed in the plan. If a serious nuclear accident occurred, it is unlikely that the procedures outlined in the plan would be adequate to decontaminate large numbers of people or to dispose safely of large amounts of radioactive waste. Simply monitoring sewers for radiation, for example, one of the principal measures called for in the plan, is an unacceptably passive approach for dealing with these problems.

7. Ingestion Zone Planning: Ohio has not completed planning for ingestion zone activities, according to the Ohio Disaster Services Agency. In the event of a serious accident, the State would have to protect food and water supplies through ad hoc actions, building on a skeletal plan. In effect, the current plan consists only of a "plan-to-complete-a-plan." FEMA has acknowledged that national guidance on these issues has been inadequate and that improving this guidance will be a priority for the Agency.

8. Radioprotective Drugs: The emergency response plan's discussion of radioprotective drugs does not meet the minimal preparedness requirements of FEMA's planning guide.

Ohio's policy on radioprotective drugs has been under reconsideration since February, 1985, when the Director of the Ohio Department of Health rescinded the policy established by his predecessors. The Ohio Department of Health is now reviewing a new draft regulation, and we expect it will be issued in early 1987.

Currently, there is no method by which the State could coordinate the administering of these drugs to the general population or off-site emergency workers. No provision has been made for administering these drugs to those individuals whose immediate evacuation may be infeasible or extremely difficult. These capabilities are required by FEMA's planning guidance.

9. Evacuation During Adverse Conditions: We question whether the emergency response plan provides adequate protection if a nuclear accident were to occur under abnormal conditions. Severe snowstorms, flooding and earthquakes are among the events that could create conditions that would greatly hinder rapid, orderly evacuation. The potential for some of these events to occur in areas where Ohio's nuclear power plants are located is significant and did not receive adequate attention in the plan's formulation.

The NRC is also concerned about the potential flooding problems at Davis-Besse as a result of historic high water levels in Lake Erie. The Commission budgeted funds for a study of extreme flood probability but later canceled it for lack of money.

10. **Planning in Adjacent Jurisdictions:** Particularly in heavily populated areas, planning must take into account the potential for a large influx of evacuees into nearby areas. In Northeast Ohio, for example, it is reasonable to assume that large numbers of people-- even from areas beyond the ten-mile Emergency Planning Zone-- might flee to Summit or Cuyahoga Counties. County officials have indicated that they would be unprepared to cope with the evacuees. To date, these counties have not been closely involved in the emergency response planning efforts.
11. **Decision-making Responsibilities:** The plan gives principal authority for off-site emergency response to county commissioners, and in many cases the State acts as advisor.

This framework for making emergency response decisions is unrealistic because it fragments decision-making and diffuses responsibility among local and state officials, creating the potential for delays in responding. In addition, it permits county officials authority for making key emergency response decisions which could affect citizens far beyond local political boundaries. This arrangement undermines the authority vested in the executive branch of state government.

12. Notification of Governmental Authorities: Executing timely emergency response measures depends on providing governmental officials with immediate, accurate information about incidents at nuclear reactors. But the plan contains no provision for providing State officials with a source of independent information about radiation releases from nuclear reactors.

Analyzing accident sequences properly and accurately predicting outcomes is essential to selecting appropriate emergency responses. Uncertainty about accident precursor sequences can lead to delays in taking emergency measures or to taking inappropriate actions.

While the current plan includes some criteria for determining appropriate off-site emergency actions, it does not give state authorities the ability to assess changes in reactor conditions and decide earlier, by referring to established thresholds, if a particular emergency response may be appropriate.

Both these problems-- lack of timely notification and inaccurate classification a problem-- occurred during the accident at Davis-Besse on June 9, 1985. While lives were not directly threatened on this occasion, delays in providing information, and misinformation, could prevent the quick responses necessary to protect the public. Ohio's experiences demonstrate that this aspect of the plan is seriously flawed; it has lost the confidence of the public and the State.

13. **Public Information about Emergency Response Plans:** We have found that many people are uninformed and misinformed about the plan. Many people at the EERT's public hearings in Lake and Ottawa counties said that in case of an emergency they would not know how to respond. The methods of disseminating information about the plan, and the quality of that information, have been inadequate.

B. RECOMMENDATIONS

Based on these conclusions, we recommend that the State work with the utility owners of Davis-Besse and Perry and local jurisdictions to correct the deficiencies noted in the existing plan as set forth above. Further, neither plant should exceed five percent of its operating capacity until these deficiencies are corrected.

1. Handicapped, sick, and elderly: Provisions for identifying and evacuating especially vulnerable populations should be improved, and a procedure should be developed for updating regularly the list of those in need of special assistance.
2. Monitoring system: A radiation monitoring system should be established to provide the State with independent information on radiation releases in the vicinity of the plants.
3. Cost of plan: Utilities should bear the cost of implementing any improvements made to the emergency response plans.
4. Bus drivers: The State should obtain the written agreement of individual bus drivers who will participate in the evacuation. Appropriate training and protective equipment should be agreed to by the utility, the union representing the bus drivers, and the State. This training should be updated from time to time as deemed appropriate by the utility, the union, and the State. If public school bus drivers are not to be used, the utilities' proposed alternative should receive express approval of the State.

5. Communication link: A direct computer link should be created between the State and the nuclear facilities' control rooms to provide the State with direct information about reactor conditions.

The plan should be amended to include the identification of thresholds in various accident sequences which, when exceeded, would trigger specific emergency response actions. This would help reduce uncertainty and potential delay in responding and provide a greater margin of safety for the public in case an evacuation were required.

6. Complete full plan: Segments of the plan addressing ingestion zone planning, recovery and re-entry, and decontamination and waste disposal need to be completed.
7. Other counties: Planning must take into account the potential impact of an accident on Cuyahoga, Summit, Portage and Lucas counties.
8. Hospitals: The State should make on-site reviews of the capability of hospitals to treat victims of radiation exposure and make specific suggestions for improvements.

9. **Public notification/ Warning sirens:** The State should conduct an independent test of the warning sirens and other components of the public notification system.
10. **Public education:** The State should conduct a campaign to improve the public's understanding of emergency response plan procedures.
11. **Radioprotective drugs:** The Ohio Department of Health should finalize its draft regulations on radioprotective drugs. Ohio should be prepared to provide these drugs to off-site emergency workers and those individuals whose evacuation might be especially difficult or time-consuming. Ohio should encourage pharmacies to carry these drugs for the convenience of the public and require the utility to subsidize their purchase.
12. **Role of State:** The plan should be altered to make the State the principal point of contact and responsibility for making emergency response decisions.
13. **PUCO monitoring:** The Public Utilities Commission of Ohio should monitor actively the management of nuclear energy facilities to enable it to foresee potential safety problems.

Carrying out this recommendation would recognize that management deficiencies can be symptoms of looming safety problems.

14. State position on plant operations: The State should continue to oppose full power operation at the plants until these recommended improvements are completed.

Should the utility owners not agree to these recommendations and fail to remedy the plant's deficiencies prior to full power operation, the State should oppose full power operation through litigation, administrative action, and by working with other state, local, and federal officials to establish more appropriate nuclear energy policies.

II. FUNDAMENTAL EMERGENCY RESPONSE PLANNING ASSUMPTIONS

A. FINDINGS

1. **Arbitrary Planning Guidance:** This plan, like emergency response plans for nuclear reactors in other states, was developed on the basis of uniform, nationally prescribed guidance, NUREG-0654. While this guidance may result in an adequate plan in some situations, it falls short elsewhere because it does not take into account unique local conditions. The peculiar risks inherent in individual reactor designs, local demographics, weather conditions, traditional political relationships between governments, transportation networks and other factors all suggest that one model emergency response plan will not fit all circumstances.

While some have advocated reductions in the size of Emergency Planning Zones, we think, for the reasons set forth below, that even when planning zones are tailored for specific plants, their size should not be reduced from the current requirements.

2. Adequacy of Basic Assumptions for Emergency Planning

We have learned that:

- (1) there is still no consensus within the scientific community on the possibility, likelihood, and consequences of severe accidents at U.S. nuclear power plants that would produce large, sudden releases of life-threatening radiation;
- (2) the NRC's own assessment of a range of questions about severe accident phenomena is far from complete, and that a range of independent experts have sharply criticized its approach to those questions;
- (3) non-Communist European countries have acted quickly to install safety measures that are still only under review in the United States; and,
- (4) the severe accident at the Chernobyl plant-- notwithstanding the well-known differences between U.S. and Chernobyl-type Soviet reactors-- may have extremely important implications for emergency response planning.

(Appendix B contains a discussion of these findings.)

We have concluded that, at the very least, the limited current knowledge of severe accidents and their consequences forces us to assume that severe accidents leading to sudden and massive releases of radiation are possible. We have concluded that individual states like Ohio must rely on national expertise to assess properly severe accident phenomena, but that we cannot rely exclusively on the NRC for this expertise.

Thus we believe that planning for severe accidents must be the basis for adequate emergency response planning and that the accidents at Three Mile Island and Chernobyl reinforce the need for the most conservative emergency planning response, a response that assumes that a worst-case accident. These accidents, even if unlikely, are possible, and their consequences are potentially so grave that they must be planned for.

B. RECOMMENDATIONS

Because of what we perceive to be very serious unresolved questions about severe accidents and their possible implications for emergency response, we believe that these issues should be subjected to a renewed national debate. The complexity of these issues and the nation-wide use of nuclear power suggest that the federal government undertake these tasks, but with active involvement of concerned states.

In addition, current federal-state arrangements under the Atomic Energy Act generally fail to take into account the important role states have in protecting public health. This issue also needs to be debated at the federal level.

We recommend that the following ideas form a part of that national debate:

1. **Site-specific Emergency Planning Zones:** The NRC should develop criteria for fashioning Emergency Planning Zones based on site-specific factors.

Although emergency planning should be shaped to meet local conditions, current information does not warrant any relaxation of existing safety guidelines. In no case should Emergency Planning Zones be smaller than ten miles in radius. In fact, extensions of both generic and site-specific Emergency Planning Zones may be warranted.

2. National Commission: A national blue-ribbon commission should be established to investigate the potential for severe nuclear reactor accidents involving sudden and large releases of radiation and related emergency response issues.

It should represent the broadest possible range of expert opinion; its mandate should include, but not be confined to:

- (1) a review of NUREG-1150, the draft version of the NRC's new reactor safety study which is due to be released in early 1987;
- (2) a review of existing standards for containment safety, and;

- (3) an evaluation of the lessons of the Chernobyl accident for U.S. reactor safety and emergency planning, as well as current European actions to improve safety.

In the aftermath of the Chernobyl accident, renewed and increased scrutiny of severe reactor accidents is an urgent national need. The NRC and FEMA are conducting studies, but because of their narrow regulatory functions and because of the lack of public confidence in their ability and willingness to evaluate these questions with complete objectivity, they should not be charged with carrying out a thorough, independent review.

The commission could be sponsored by Ohio and other states and localities who share an interest in nuclear safety.

4. Price Anderson Act: The financial liability for nuclear accidents under the Price Anderson Act, which limits liability in case of accidents, should be expanded.
5. Licensing: The rights of states should be expanded in the licensing procedure for nuclear plants.

Because governors are specifically charged with the responsibility for protecting public health and safety, we recommend that states have expanded legal rights to become involved in the licensing of nuclear power plants. The current system of licensing nuclear power plants gives states many responsibilities but few legal rights. As Ohio has discovered, the NRC often chooses not to use its discretion to permit states limited involvement in licensing facilities.

SUMMARY OF LITIGATION TAKEN FROM STATEMENT BY ATTORNEY GENERALANTHONY J. CELEBREZZE, JR.

TESTIMONY OF ANTHONY J. CELEBREZZE, JR.,

ATTORNEY GENERAL OF OHIO,

BEFORE THE NORTHEASTERN OHIO CONGRESSIONAL DELEGATION
CONCERNING THE PERRY NUCLEAR POWER PLANT.

(DECEMBER 16, 1986, HEARING)

I appreciate the opportunity to address this hearing. My office is presently involved in a litigation effort to prevent the Perry Nuclear Power Plant from exceeding 83 power until such time as there are adequate assurances of protection for those citizens located in the vicinity of the Perry Nuclear Power Plant in the event of a radiological emergency. A review team appointed by the Governor is presently in the process of reviewing and reevaluating the current plan. This review team has uncovered numerous as well as serious flaws in the plan.

In September, 1986, Governor Celeste requested my office to initiate an attempt to intervene in the Perry licensing proceeding. On September 5, 1986 I filed a petition with the Nuclear Regulatory Commission seeking to intervene as the representative of an interested state pursuant to the Commission's Rules of Practice. We were attempting to preserve our opportunity to participate in the remainder of the Perry licensing proceedings as a formal participant. In the petition we advised the NRC that the sole issue concerning the state was the adequacy of off-site emergency preparedness at the Perry plant.

On September 19, 1986, the Cleveland Electric Illuminating Co. ("CEI"), the operator and part owner of the Perry plant, responded to the petition, urging its denial. On September 23,

1986 the NRC staff also responded, noting that the adjudicatory proceedings were closed. I replied to these requests for summary dismissal of our petition and concerns on September 29, 1986. In that reply I informed the Commission that while the adjudicatory proceedings were closed the licensing proceedings were not. The commission had not yet completed its "immediate effectiveness review" which is required before allowing an operating license to issue to a commercial nuclear facility. We informed the Commission that the State of Ohio was requesting an opportunity to advise them on the state of emergency preparedness at the Perry plant. It was my belief that cooperation between the State, the utility and the NRC could only enhance the licensing process and facilitate the adoption of an adequate evacuation plan. Since the full-power license had not yet issued, it was well within the Commission's discretion to allow the State to intervene in order to allow it to formally advise the Commission as to its concerns before the full-power license issued.

In an attempt to keep the Commission apprised of the State's review progress I supplemented my earlier filings with two subsequent memoranda, the first dated October 21, 1986 and the second dated October 29, 1986. These submissions set forth Ohio's preliminary conclusions that the emergency plan was seriously flawed in several crucially important respects. In each memoranda I again pressed our request that the Perry plant not be permitted to exceed 5% power until the Ohio review

process had been completed. The deadline set for submission of the review team's findings to the Governor is December 31, 1986.

Despite these submissions, on October 30, 1986 the Commission denied the State of Ohio's Petition for Leave to Intervene in the Perry licensing proceedings on the ground of untimeliness. On November 7, 1986 I petitioned the United States Court of Appeals for the Sixth Circuit to review the NRC's final order denying intervention. I also moved the Court to issue an emergency stay of NRC action on the full-power licensing of Perry, pending review of the merits of our case. The Sixth Circuit at first issued the stay late on Friday November 7th but dissolved it the following week, since the actual full-power license had not then issued.

On November 7, 1986 the Commission voted 4-1 to authorize the NRC staff to issue a full-power license for Perry. The license was issued on November 13, 1986. On that same date, the Sixth Circuit, finding the primary consideration to be public safety, ordered a stay of the full-power license for the Perry Nuclear Power Plant which would have allowed it to exceed its current five percent power level. Our petition to review the full power license was filed November 17, 1986. The Court consolidated both Ohio petitions with an unrelated appeal of a citizen group challenging the seismic design of the plant and set an expedited briefing schedule.

All briefing was completed by November 28, 1986. The primary issues addressed were whether the NRC's order denying

the State of Ohio formal intervention status in the Perry operating licensing proceeding was arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law, and whether the NRC's issuance of a full-power license to Perry was an abuse of discretion and not in accordance with law. I argued that this is a unique case, a case where the author and implementor of an off-site emergency plan has found flaws in its own plan. While the State conceded it was attempting to intervene late in the licensing proceedings, it was doing so in a timely fashion. The State did not attempt intervention until it had serious concerns relating to emergency planning. The State responsibly cooperated with the utility and the NRC during the entire licensing proceedings. It was not until the State uncovered serious deficiencies in the evacuation plan that it attempted to intervene and to keep the plant from exceeding 5% until the evacuation plan has been reevaluated and improved.

The Sixth Circuit heard oral arguments on the merits on December 3, 1986. The stay remains in effect pending the resolution of the matter. I am awaiting the outcome. In the meantime the State's review team is diligently reviewing the Perry off-site emergency plan, and work is advancing according to schedule. The review team has assured me that their findings will be submitted to the Governor on December 31, 1986.

This is an up-to-date summary of the legal effort in the Perry licensing proceedings. I hope that it will assist you in your assessment of the effect of the Perry plant on the affected community. Once again I wish to express my appreciation for the opportunity to address this hearing.

Respectfully submitted,

ANTHONY J. CELEBREZZE, JR.
ATTORNEY GENERAL OF OHIO

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APPENDIX B

SEVERE ACCIDENTS AND EMERGENCY PLANNING: UNRESOLVED ISSUES

No Consensus on Severe Accidents

The nuclear utility industry and some scientists have asserted that severe accidents are impossible, or so improbable that emergency planning need not be based on them. They have also asserted that a Chernobyl-type accident is not possible at a U.S. reactor.

While also emphasizing the differences between Chernobyl-type reactors and most U.S. reactors, the NRC and FEMA have asserted the importance of understanding a range of severe accident phenomena and the implications of the accidents at Three Mile Island and at Chernobyl for U.S. reactors and emergency response planning. The NRC staff in 1986 completed a major study of source terms (i.e. the type, amount, and timing of radiation releases associated with some accident sequences). A draft NRC report on severe accident sequences, designed as successor to the Reactor Safety Study of 1975, is due for release early in 1987. Both reports are almost certain to be used to evaluate and possibly revise current assumptions about emergency response planning.

The EERT welcomes the opportunity this NRC work may provide for public discussion of the possibility and consequences of severe accidents at U.S. nuclear plants. However, many independent experts have made serious criticisms of the NRC's treatment of severe accident phenomena-- criticisms that have sometimes been supported within the NRC itself. (Appendix C consists of a list of experts and a selected bibliography consulted in the preparation of this part of the report.) This criticism has been aimed at excessively optimistic NRC assumptions about the possible sequences of severe accidents (accidents resulting in serious core damage), containment performance, and radiation releases, as well as the adequacy of NRC methods for evaluating the risk to the public.

Neglected Accident Sequences: Steam Explosions
and Other Phenomena

Accident sequences involving steam explosions have been neglected by the NRC in its assessment of severe accident phenomena. The NRC's current position, apparently, is that steam explosions that threaten containment integrity are virtually impossible. According to some of the experts the EERT consulted, however, this NRC optimism is based on the evaluation of its Steam Explosions Review Group (SERG), and this evaluation is not credible. SERG members were simply asked to make a subjective quantitative guess of the probability of a severe in-vessel steam explosion rupturing containment, with their guesses varying by many orders of magnitude and with no consensus on how to model steam explosion phenomena.

Dr. Marshall Berman, Supervisor of the Severe Accident Containment Response Division of Sandia National Laboratories, which performs major research for the NRC, stated in a recent letter that he and his colleagues agreed that the benefits of nuclear power outweighed the currently understood risks. But he also wrote that:

we believe that the understanding of steam explosion phenomena is currently too weak to enable realistic assessment of risk due to such explosions. We also believe that the Chernobyl 'steam explosion' may shed some light on this situation. However, an objective analyst would err if he took an extreme approach based on a position that either the Chernobyl accident is directly relevant or has no relevance to American reactors.

And, in a October 8, 1986 paper titled "Chernobyl: Where do we go from here?", Dr. Berman states that, "To conclude that Western light water reactors are not vulnerable to steam explosions based on the presumed absence of an explosion at TMI is to make a grave error."

Steam explosions are not the only potentially dangerous accident sequences that have received inadequate attention from the NRC; others are high-pressure melt injection, station blackout, containment by-pass, and hydrogen explosions.

Different nuclear plants may be more or less vulnerable to some of these sequences, but some hydrogen or steam explosions could, conceivably, rupture even the strongest containments, and even lead to a sudden and large release of radiation.

Controversy Over Reactor Containments

In addition to the debates about the nature and possibilities of severe accidents, the EERT is also greatly concerned about the continuing controversy over the ability of reactor containments to contain radiation releases. Daniel Hirsch of the University of California at Santa Cruz has criticized the NRC's Containment Performance Design Objective panel for refusing to establish an explicit containment performance goal, because the goal that had been considered-- a ten percent chance of containment failure during a core melt accident and a 40 percent chance of a core meltdown over the lifetime of the current generation of nuclear plants-- was one unlikely to be accepted by the public if made explicit.

Furthermore, according to Hirsch, this core meltdown probability is based on the assumption that individual reactors have a core melt probability of one in 10,000 per reactor-year, but that actual risk analyses of individual plants have generally predicted a core melt probability which is three times higher (three in 10,000 per reactor-year). Of course, the greater the possibility of a core meltdown, the more urgent is the need to establish adequate standards of containment performance.

Controversy Over Accident Risk Assessment

Controversy among experts over containment performance is one part of a broader debate over the NRC's methods for assessing reactor safety and the consequences of severe accidents. In particular, the adequacy of probabilistic risk assessment, and how much it should be used to shape safety policy, is at the heart of the debate on nuclear safety. Briefly, probabilistic risk assessment assumes an accident, transient (i.e., a change of conditions, in temperature or pressure, within a nuclear reactor), or external event. It then identifies human or mechanical failures affecting the safety systems that control or reduce the consequences of the initiating event and determines the probability (or range of probability) of failure for each system.

The Union of Concerned Scientists report, The Source Term Debate, says it

is still not possible to make precise, quantitative statements about overall reactor risks... The underlying tool of nuclear risk analysis - probabilistic risk analysis - suffers from a range of shortcomings which in light of the enormous complexity of nuclear power plants, may never be overcome ... Even the simple identification - for each plant - of all the important accident sequences, internally as well as externally initiated, that should be examined is a daunting task and may not, in principle, be solvable.

Modeling the vast number of non-equilibrium chemical and physical processes and interactions that constitute these sequences is also beyond today's capabilities. Indeed it is by no means clear that all of the physical phenomena that are important in the development of these accidents have even been identified.

NRC Commissioner James K. Asselstine has rejected the NRC's use of probabilistic risk assessment to minimize the threat to the public from severe accidents. In his dissent from the NRC's 1985 policy statement on severe accidents, Asselstine writes that the range of probabilities for core meltdown at a typical reactor can range from one in one thousand per reactor-year to one in 100,000. The reliability of probabilistic risk assessment has been further reduced by its neglect of factors that could have great importance in overall plant safety-operator training, plant maintenance, equipment deterioration due to age, human error, and seismic conditions.

In his July 15, 1986, letter to Carl Walske (Atomic Industrial Forum), Asselstine says "To convey an impression that Chernobyl-type releases are impossible in this country is as inaccurate as conveying an impression that a similar disaster is a certainty . . . we do not fully understand the risks of nuclear power, and we should not be fearful of saying so."

Risk is the product of probability and consequences, and so even a very low probability accident could present great risk to the public if the consequences are severe enough. The great uncertainty and controversy around severe nuclear accidents, especially those leading to early and massive releases of radiation; the immense implications of such accidents for emergency planning; public lack of confidence in the NRC's willingness or ability to satisfactorily resolve these questions; and, the inability of individual states to completely evaluate these extraordinarily complex technical and scientific questions on their own makes imperative an independent national review of the implications for policy of severe accidents at nuclear plants.

Severe Accidents and Emergency Planning

The Chernobyl accident suggests how severe accidents may force revision of our current emergency planning assumptions. While controversy over the long-term health effects of the Chernobyl accident continues, it is clear that fall-out levels exceeding the U.S. protective action guides (PAGs) occurred, not only at ten miles or less, but as far as 1000 miles from the accident site. Moreover, one analyst has raised the possibility that if wind conditions had been different, early fatalities could have occurred in Kiev-- 130 kilometers from the Chernobyl site. The differences between Soviet and U.S. reactors have been stressed repeatedly, but a worst-case accident at a U.S. reactor, with breach of containment, could conceivably have similar long-distance effects depending on weather conditions.

The lessons of the Chernobyl accident for U.S. nuclear plants are far from exhausted. Some countries have already developed new policies because of the accident; West Germany has set up a system to monitor radiation levels throughout the country and to inform the public what measures--interdiction of milk and fresh vegetables, drinking rainwater, disposing of air filters, etc.--may be necessary in certain accidents.

According to NRC Commissioner Asselstine, European countries have acted quickly to require more safety measures-- such as installing dedicated decay heat removal systems or filtered vents-- at existing nuclear plants to increase public safety. In contrast, he has said, the NRC has studied such measures indefinitely. These European safety improvements, some of which antedate the Chernobyl accident, appear to be based, at least implicitly, on the assumption that severe accidents with major off-site consequences are possible.

The possibility of severe nuclear plant accidents at U.S. nuclear power plants, especially with early containment failure and sudden releases of radiation, forces a re-calculation of almost every aspect of emergency response planning. The issue of the appropriate size of the Emergency Planning Zone is the most obvious element of the plan to be affected. While the NRC and FEMA think that no immediate health effects would be experienced beyond a range of ten miles-- and that is a conservative estimate, in their view-- Sandia National Laboratories estimated in 1982 that, "for severe core melt accidents, early fatalities would generally not occur beyond about 15 miles, and in the worst case, would be confined to about 25 miles, while early injuries would probably be confined to downwind distances of about 50 miles" (NUREG/CR 2239, "Technical Guidance for Siting Criteria Development," Sandia National Laboratories, December, 1982).

In the opinion of several experts the EERT consulted, the present research conducted by the NRC and others on source terms does not justify relaxing existing safety standards or any reduction in the size of the Emergency Planning Zone-- an action which some utilities have proposed and which NRC staff is apparently considering. In fact, several experts the EERT consulted favor an extension of the planning zone.

Another example of the implications for emergency response planning of considering a wider range of severe accidents scenarios is that less time might be available to take emergency measures. The current plan for the Perry plant states that the two-mile area immediately surrounding the plant could be evacuated within 160 minutes under optimum weather conditions, a period of time which, the plan implies, would provide an adequate degree of protection.

Independent nuclear safety experts the EERT consulted, however, have said that only 30 minutes might be available before a radiation release results from a core meltdown. In the worst cases, the time between the start of an accident and a massive release of radiation could be as little as an hour. Even if the probability of such accidents are low, great uncertainty about their probability and their severe consequences means that emergency planning must take them into account.

Our conclusion that sudden, large releases of radiation must be considered possible suggests that a reformulation of the entire emergency response plan might be in order if the public is to be provided adequate protection from such events.

APPENDIX C

LIST OF EXPERTS AND SOURCES CONSULTED

I. Experts

- 1) Dr. Jan Beyer, Senior Staff Scientist, National Audubon Society.
- 2) Steven Sholly, MHB Associates (energy consulting firm); co-author of Source Term Debate of the Union of Concerned Scientists.
- 3) Daniel Hirsch, Director, Stevenson Program on Nuclear Policy, University of California at Santa Cruz.
- 4) Dr. Gordon Thompson, Executive Director, Institute for Resource and Security Studies, Cambridge, MA.
- 5) John Austin, technical aide to NRC Commissioner James Asselstine.
- 6) Dr. Christoph Mollenhauer, Professor of Physics, Chair, Program on Environment, Technology, and Society, Clark University.
- 7) Robert Pollard, Nuclear Safety Engineer, Union of Concerned Scientists.
- 8) Dr. Marshall Berman, Supervisor, Severe Accident Containment Response Division, Sandia National Laboratories.
- 9) Dr. Richard Wilson, Professor of Physics, Harvard University.
- 10) Gary Wright, Illinois Department of Nuclear Safety.
- 11) Michael Harriote, Acting Executive Director, Nuclear Information and Resource Service.
- 12) Ray Fraley, Staff Director of Advisory Committee on Reactor Safety.
- 13) Dr. James Mackenzie, World Resources Institute.
- 14) Robert M. Ryan, Director of the Office of Radiation and Nuclear Safety at Rensselaer Polytechnic Institute.
- 15) Thomas B. Cochran, Senior Staff Attorney of the National Resources Defense Council.

II. Documents (Partial Listing)

1. Reassessment of the Technical Bases for Estimating Source Terms, Final Report (NUREG-0956); U.S. Nuclear Regulatory Commission, July 1986.
2. ACRS Comments on NUREG-0956, "Reassessment of the Technical Bases for Estimating Source Terms - Draft Report for Comment", Advisory Committee on Reactor Safeguards, U.S. Nuclear Regulatory Commission, December 12, 1985.
3. Summary Report on the Post-Accident Review Meeting on the Chernobyl Accident. International Safety Advisory Group, September 1986.
4. "Chernobyl: An Early Report," C. Hohenemser et al, Environment, June 1986.
5. "The accident at Chernobyl: A report on risk management at a local hot spot in West Germany," Annual meeting of the Society for Risk Analysis, Boston, November 1986.
6. "Chernobyl and the U.S. nuclear industry," Bulletin of the Atomic Scientists, November 1986.
7. A Guide Book to Nuclear Reactors, Anthony V. Nero Jr., University of California Press, 1979.
8. The Source Term Debate, Steven Shelly and Dr. Gordon Thompson, Union of Concerned Scientists, 1986.
9. "The Lessons of Chernobyl," Science, September 1986.
10. "Implications of the Chernobyl-4 Accident for Nuclear Emergency Planning for the State of New York," prepared for the State of New York Consumer Protection Board by MHB Technical Associates, June 1986.
11. "Chernobyl: Assessing the Accident," Dr. Richard Wilson, Issues in Science and Technology, Fall 1986.
12. "Summary Paper on the Chernobyl Transient Overpower Accident and its Implications for U.S. Power Reactors," Argonne National Laboratory, Reactor Analysis and Safety Division, August 1986.
13. Technical Guidance for Siting Criteria Development, Sandia National Laboratories, 1982. (NUREG/CR-2239; SAND81-1542).

14. "Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants," with Dissent of Commissioner James K. Asselstine, Nuclear Regulatory Commission, August 1985.
15. "Comments on Draft Report, Reassessment of the Technical Bases for Estimating Source Terms, NUREG-0956," Illinois Department of Nuclear Safety, January 1986.
16. "Comments on NUREG-0956" by MHB Technical Associates for Suffolk County, New York, January 1986.
17. Memorandum, "Steam Explosions," Joram Hopenfeld, Reactor Systems Research Branch, Division of Accident Evaluation, NRC, January 1985.
18. Letter to W. H. Trevor Pratt, Brookhaven National Laboratory (10-30-86 dissent from final report of the NRC's Containment Performance Design Objective panel) and "Assessing the Need for Containment Performance Design Objectives for U.S. Nuclear Reactors" (July 29, 1986) by Daniel Hirsch, Director, Program on Nuclear Policy, University of California at Santa Cruz.
19. "Implications of the Chernobyl-4 Accident for Accident Management," "Chernobyl: Where Do We Go From Here?", 1986; "Comments on Draft Summary of the Steam Explosion Review" (16 January 1985) and "Commentary on the Deliberations and Conclusions of the Steam Explosion Review Group (SERG)" (28 February 1985), Dr. Marshall Berman, Severe Accident Containment Response Division, Sandia National Laboratories.
20. Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, NUREG-0654/FEA-REP-1 Rev. 1, 1980.

5/7/87
Transcript File

PREPARED TESTIMONY
SUBMITTED BY
UNITED STATES NUCLEAR REGULATORY COMMISSION

TO

SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS
UNITED STATES HOUSE OF REPRESENTATIVES

CONCERNING
NRC LEGISLATIVE PROPOSALS, THE NUCLEAR
POWER EMERGENCY RESPONSE DATA SYSTEM ACT OF
1987, AND THE
WESTERN LOW-LEVEL RADIOACTIVE WASTE DISPOSAL COMPACT

PRESENTED BY

LANDO W. ZECH, JR.

CHAIRMAN

SUBMITTED: MAY 7, 1987

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Mr. Chairman, Members of the Subcommittee, I am pleased to appear before you today to discuss four legislative proposals that the NRC submitted to Congress this year, the "Nuclear Power Emergency Response Data System Act of 1987," as well as the proposed Western Low-Level Radioactive Waste Disposal Compact. The Commission is grateful to you, Mr. Chairman, for introducing our legislative proposals, and we are most appreciative of the Committee's interest in our legislative recommendations. Our testimony will begin with a discussion of the NRC legislative proposals.

NRC Legislative Proposals

1. H.R. 1316--Unauthorized Possession of Firearms

Three of the proposed bills seek to enhance our ability to prevent or deter theft or sabotage of nuclear equipment and materials. H.R. 1316 would authorize the Commission to promulgate regulations which would prohibit a person who has not obtained prior authorization to carry, transport, or otherwise introduce or cause to be introduced any dangerous weapon, explosive, or other dangerous instrument into any facility, installation, or real property regulated by the Commission. Violation of the regulation would constitute a Federal crime punishable by a \$5000 fine, imprisonment for not more than one year, or both. The Commission in promulgating implementing regulations would be authorized to determine the scope of the prohibition. The Commission's intent would be to limit the applicability of those regulations to those

licensed nuclear facilities and materials which must be protected against theft or radiological sabotage.

This legislation is needed because there have been an increasing number of reported incidents where persons without authorization have brought firearms into protected areas of NRC regulated sites. There were, for example, eleven such incidents in 1985 and twelve in 1986. While, the Commission currently can and does impose sanctions against licensees for permitting unauthorized weapons or other dangerous instruments to enter the site, there is no federal law permitting the imposition of criminal sanctions against the person responsible for bringing the weapon or other dangerous instrument to the site.

We believe enactment of H.R. 1316 would assist our licensees in their efforts to safeguard those licensed nuclear facilities and materials which must be protected against nuclear theft or sabotage. In addition, enactment of this legislation would promote the national policy of maintaining comparable safeguards for similar nuclear materials and facilities in the public and private sectors. Under section 229a. of the Atomic Energy Act, unauthorized introduction of weapons or other dangerous instruments at nuclear facilities owned by the Department of Energy would constitute a federal crime. Enactment of H.R. 1316 would permit similar safeguards with respect to unauthorized introduction of weapons at non-DOE nuclear facilities.

2. H.R. 1318--Sabotage During Construction of a Facility

The second legislative proposal, H.R. 1318, would amend section 236 of the Atomic Energy Act to make it a crime to sabotage or attempt to sabotage a nuclear production or utilization facility during its construction where the action, if it went undetected, could affect public health and safety. Currently, section 236 covers acts of sabotage to a utilization facility only after it has received its operating license from the Commission. Sabotage during the later stages of construction, particularly during pre-operational testing, can be equally serious. For example, in 1984 a bag containing some parts was found inside a pipe which had been welded closed after it had undergone several pre-welding checks at a plant under construction. While this incident was determined to be negligence rather than sabotage, it demonstrated that an act of sabotage during construction could potentially have an adverse effect on public health and safety.

Sabotage during the late stages of construction is of special concern since most inspections which would have discovered the sabotage would have already occurred. Therefore there is the possibility that the sabotage might not be discovered prior to operation. In drafting this legislation we have narrowly defined the type of sabotage which would constitute a federal offense. The sabotage or attempted sabotage must be serious enough to have a possible effect on public health and safety if not discovered prior to operation.

We therefore believe that enactment of H.R. 1318 is warranted to provide greater protection for the public health and safety by enacting criminal sanctions to deter such sabotage.

3. H.R. 1319--Protection of Sensitive Generic Safeguards Information

The third safeguards-related bill is H.R. 1319. This legislation would amend section 147 of the Atomic Energy Act to provide that the Commission is authorized to protect from public disclosure certain categories of sensitive generic safeguards information when disclosure could compromise or negate site-specific security measures required by the Commission to protect nuclear materials and facilities against theft, diversion or sabotage.

In 1980 Congress added section 147 to the Atomic Energy Act. In that section Congress provided important protections against unauthorized disclosure of a licensee's or applicant's sensitive information related to the security of specific nuclear facilities and special nuclear materials. However, Congress did not enact a broadly written provision for withholding generic information on safeguards matters from public disclosure.

As a result of its experience in implementing section 147, the Commission is aware of an ambiguity in that section relating to the Commission's authority to

protect from public disclosure generic information that would be likely to endanger specific safeguards measures implemented by NPC licensees.

In its Diablo Canyon operating license proceeding, the Commission concluded that certain generic information regarding the design basis threat, specifically, that part of the design basis threat relating to the number of armed adversaries against which security plan characteristics are developed was an integral part of the licensee's security plan. The Commission determined that release of that information could reasonably be expected to provide substantial assistance to a potential saboteur of the Diablo Canyon facility. The Commission further determined, that the information, although nominally generic, was properly considered a detailed portion of the applicant's plan and that the Commission was authorized under section 147 to protect that information from public disclosure.

The Commission believes that its interpretation of section 147 is correct. An interpretation contrary to the Commission's could negate the important protections provided by Congress for sensitive safeguards information. Accordingly, the Commission believes it would be useful for Congress to codify its authority to withhold and protect generic information of the nature discussed.

The Commission's concern is not limited to the Diablo Canyon situation addressed above. The Commission is also concerned that a court could find that section 147 does not provide a basis for withholding from public disclosure generic reports, studies and analyses of sabotage vulnerabilities. Such a holding would be inconsistent with the national interest in preserving effective safeguards.

Moreover, it appears that without clarification of section 147, a federal court which disagreed with NRC's interpretation of section 147 could order the NRC to release security-related information similar or identical to that being protected by the Department of Energy pursuant to section 148 of the Atomic Energy Act. Even though it could be argued that NRC safeguards information is not as sensitive as DOE information because DOE facilities are of greater national security significance, public disclosure of certain sensitive generic safeguards information relative to NRC facilities could be of substantial assistance to one who contemplated sabotaging a DOE facility because the information might be identical. Accordingly, failure to amend section 147 could significantly negate the Congressional purpose underlying the enactment of section 148.

Because the language of H.R. 1319 is closely related to the protections already enacted by Congress this legislation, if enacted, would not significantly increase the ability of the Commission to withhold information from the public. Yet, by explicitly authorizing the withholding of a small class of sensitive

safeguards information, Congress could help prevent the disclosure of information that could be of great assistance to a saboteur.

4. H.R. 1317--Reporting of Violations or Defects

Our fourth legislative proposal, H.R. 1317, pertains to the Commission's ability to receive proper notice of defects or regulatory violations at nuclear power plants and other regulated activities, where such defects or violations could create substantial safety hazards.

Section 206 of the Energy Reorganization Act of 1974 provides that any individual director or responsible officer of a firm constructing, owning, operating, or supplying components of any facility or activity licensed or regulated under the Atomic Energy Act or the Energy Reorganization Act must promptly notify the Commission of violations of the Atomic Energy Act or any applicable regulation, order or license condition relating to substantial safety hazards or any defect which could create a substantial safety hazard. Any person who knowingly and consciously fails to provide notice is subject to a civil penalty.

Based on more than a decade of experience in implementing this statutory provision, we believe that some changes in section 206 are warranted. First, we believe that the section should be revised to provide that the firm, as well

as individual directors and responsible officers should be responsible for notifying the Commission. This assignment of responsibility would be more in accord with the general approach to regulation under the Atomic Energy Act, which imposes responsibility on the licensee, rather than individual corporate officers for compliance with regulatory requirements. Under our proposal the current provision that a civil penalty may be levied against individual directors and responsible officers for a knowing and conscious failure to notify the Commission would be retained. However, the proposed legislation would subject a firm to sanctions for any failure to notify, regardless of its intent or degree of negligence in failing to comply with the Commission's regulations. This would ensure that the failure to report violation or defects, regardless of the reasons for the reporting failure, would be subject to possible civil sanctions. This approach is in accord with section 234 of the Atomic Energy Act, which authorizes civil penalties for violations without regard to whether they are knowing and conscious.

H.R. 1317 would also clarify the Commission's authority to promulgate regulations, issue orders, and conduct inspections and investigations under section 206. These provisions would codify existing practice and remove any questions regarding the Commission's authority to take necessary actions to implement section 206.

The proposed legislation would also clarify that a firm, whether it be a licensee or a non-licensee, may be subject to a civil penalty for violating

Commission regulations or orders issued to implement and enforce section 206, as well as for violations of section 206 itself. The current statute is ambiguous regarding whether the Commission is authorized to impose sanctions against non-licensees, such as reactor vendors.

H.R. 1317 would also make other amendments to section 206. The bill would clarify that the requirements of section 206 must be prominently posted on the premises of any firm affected by the section, and not simply at facilities licensed under the Atomic Energy Act. This would cover suppliers of components and other firms who are covered by section 206 but who are not regulated directly under the Atomic Energy Act.

Finally, the proposed legislation would subject the Department of Energy to the requirements of section 206 to the extent that the Department's activities, facilities or materials, are licensed by the Commission. The Commission believes the Department of Energy to the extent it is subject to NRC licensing should be subject to the same regulatory requirements as our other licensees.

In conclusion, the Commission believes that the adoption of these amendments would clarify the scope of section 206 and thereby ensure that the Commission has sufficient authority to implement effectively the notification requirements mandated by Congress.

*Ken -
Here's a better copy*

H.R. 1570--The Nuclear Power Emergency Response Data System Act of 1987

Ed

H.R. 1570 would require the creation of an Emergency Response Data System ("ERDS"). This system would permit direct electronic transmission of selected parameters from nuclear power reactors to the Commission. The system would be used only during emergencies.

The Commission supports enactment of legislation such as H.R. 1570 because such legislation would substantially enhance our incident response capability.

The Commission has determined that NRC's primary role in an emergency is to monitor and advise. Our monitoring role is in two areas.

- ° We monitor the licensee to assure that appropriate recommendations are made with respect to offsite actions.
- ° We also monitor the licensee to assure they are taking the appropriate on-site action to mitigate consequences of the incident.

Another aspect of our role is advisory.

- ° We support both the licensee and the onsite NRC response team with technical analyses, advice and logistical support.

We also support offsite authorities including confirming licensee's recommendations to offsite authorities.

Agency advice or recommendation will be made by the NRC's Chairman (or his designee) to a licensee manager or the appropriate state or local decisionmaker.

In addition to the above, NRC is the single federal focal point for keeping other Federal agencies and entities and the media informed on the status of the incident.

The effectiveness of the NRC in performing its role is dependent on the quality and timeliness of the event information the agency receives. The types of information the agency needs for emergency response are: reactor systems conditions, containment building conditions, radioactivity release rates, and the plant's meteorological data. It may also be appropriate to provide state and local authorities with the meteorological and radiological data as this data is useful given their role and expertise.

Currently, the data is transmitted to the NRC from the licensee by standard voice telephone communications. Two primary phone links are used. One is dedicated for reactor data; the other is primarily for radiological and

meteorological data. Our experience with voice-only emergency communications---, starting with TMI and reinforced numerous times since then---, is that it can be too slow and can be error prone. Information is misunderstood, frequently creating false issues which at best divert experts from the real problems. Even worse incorrect data can cause NRC to respond to the licensee or offsite officials with inaccurate or outdated advice.

NRC's thinking on how to enhance its incident response capability has evolved over several years. The NRC has considered options varying from the Nuclear Data Link, involving extensive continuous transmission of a large quantity of parameters from all facilities, to the current system in which we rely on telephonic communications. The system determined by the Commission to provide the data in an accurate, reliable, and timely manner while minimizing the impact on our licensees is the Emergency Response Data System envisioned by this bill. We have successfully conducted tests of the ERDS concept with Duke Power Company at the McGuire facility and with Commonwealth Edison at the LaSalle facility. Both tests confirmed the advantages of having direct electronic transmission of a selected set of parameters.

Based on these successful tests of the concept, the NRC initiated an ERDS Requirements Analysis. The effort consisted of visits to the licensees to determine the design of the site data systems and the availability of the data requested by the NRC.

Based on the results of the surveys, the Commission believes the ERDS concept can be implemented with relatively little difficulty at essentially all sites. Ease of implementation will vary depending on type and utilization of licensee equipment. Implementation at some sites may require a delay until other equipment upgrades are completed.

In view of the large potential benefit to the NRC incident response capability from the ERDS and the results of the survey indicating the relative ease of implementation, the NRC currently plans to begin implementation of the system on a voluntary basis. While we expect the majority of licensees will see the benefits of the system and will participate, there is no guarantee. H.R. 1570 would make implementation mandatory for all licensees.

H.R. 1570 would require complete implementation within 3 years of passage. The current NRC implementation plan is phased over a longer period to accommodate current licensees' schedules for equipment upgrades. Passage of H.R. 1570 would require some licensees to accelerate their current schedules.

H.R. 1570 establishes the Emergency Response Data System Fund which provides for full reimbursement of ERDS costs and increased funding assurance for the NRC.

We believe H.R. 1570 would be improved if Congress provided greater guidance regarding the establishment of the fund. The legislation should indicate who is to pay into the fund, when are payments to be made, and provide a formula or criteria for determining how much each licensee should pay. It would be difficult to establish the fund without such direction.

In conclusion, H.R. 1570 would provide for expeditious and consistent implementation of an Emergency Response Data System and would greatly enhance our incident response capability. If H.R.1570 is enacted, we plan to initiate a rulemaking proceeding to define the nature of the system to be required, and we would work closely with the States to help assure, to the extent possible, that any special data needs for their emergency response decisions are accommodated.

H.R. 1530 Western Low-Level Waste Disposal Compact

H.R. 1530 is before Congress so that the States of Arizona, South Dakota, and certain other eligible States, may obtain Congressional consent as required by the Constitution to enter into an interstate compact regarding the disposal of low-level radioactive waste.

Since the passage of the Low-Level Radioactive Waste Policy Act of 1980 (Public Law 97-573) we have seen most of the States working to fulfill their obligations to provide disposal capacity for low-level radioactive waste. All of this effort has led to the Congressional consent to 7 compacts covering 35

states in Title II - Omnibus Low-Level Radioactive Waste Interstate Compact Consent Act (Public Law 99-240). Both Arizona and South Dakota have been working hard since 1980 to achieve provisions for the disposal of low-level radioactive waste in their States. Arizona participated in negotiations with the Rocky Mountain States and California before it settled with its current partner, South Dakota, in the Western Compact. Additionally, Arizona has accepted the responsibility to become the host State and is in the process of enacting the necessary siting legislation.

During this same time frame, South Dakota investigated the possibility of hosting a site at Igloo to be developed by Chem-Nuclear Systems, Inc. South Dakota also considered, along with North Dakota, a two-State compact. These efforts did not materialize so South Dakota then negotiated separately with both California and Arizona to form a Western Compact. Only the one with Arizona came to fruition with both States enacting the required compact legislation. Our analysis of the Western Compact considers the historical record of the development of this policy issue in the two States.

The Commission supports the basic policy of encouraging regional solutions to the disposal of low-level radioactive waste. We believe that regional sites are preferable from a public health and safety standpoint to a proliferation of smaller, and possibly economically marginal facilities. Also, as we have testified previously, there should be a home for all waste generated within the States. Given the historical developments of the compacting process in the two States, we have no overall objections from health, safety, and environmental considerations of the two States, Arizona and South Dakota, forming the Western

Compact. In fact, it would be desirable to include California and North Dakota as well. A more complete discussion of this rationale is given in the enclosure to my testimony.

Our major concerns with the details of the Western Compact relate to several of the definitions contained in the Compact. We would prefer that those definitions conform more closely to the language of the Low-Level Radioactive Waste Policy Amendments Act of 1985, to avoid any confusion. A more complete discussion of our concerns as well as a number of other comments that we believe may be helpful is given in the enclosure to this testimony.

In conclusion, we support Congressional consent of the Western Low-Level Waste Disposal Compact and commend Arizona and South Dakota for the efforts they have made during the past 7-years in arriving at a satisfactory solution to the difficult task of fulfilling their responsibilities of providing for low-level waste disposal capacity.

Mr. Chairman, that completes my personal statement.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

May 11, 1987

MEMORANDUM FOR: Chairman Zech
Commissioner Asselstine
Commissioner Bernthal
Commissioner Carr

FROM: John Bradburne, Director
Congressional Affairs, GPA *John*

SUBJECT: UDALL SUBCOMMITTEE HEARING ON NRC
LEGISLATIVE PROPOSALS

On Thursday, May 7, the Subcommittee on Energy and the Environment held hearings on four NRC legislative proposals, the Arizona-South Dakota Compact and the Nuclear Emergency Response Data System (ERDS) bill. The hearing was chaired by Rep. Udall, the witness list is attached.

Chairman Zech read the Commission's short statement into the record, then responded to questions from the Subcommittee. The Chairman indicated that the Commission supported the ERDS bill and that he would not object if states have additional, off-site data to assist them during emergencies. He would also support grandfathering existing state data systems. Edward Jordan indicated that the NRC is planning voluntary implementation of the ERDS system over the next five years.

Mr. McMeekin indicated that Duke Power had questions concerning the need, practicality and cost for near real time data transmission. A copy of his testimony is attached.

CONTACT: Frederick Combs x-41443

Attachments:

As stated

cc: EDO

OGC

SECY (2)

AEOD

GPA/H. Denton

C. Kammerer, SLITP

J. Fouchard, PA

J. Shea, IP

~~8801120210~~ 6/p

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS
SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT

HEARING

ON

H.R. 1316, H.R. 1317, H.R. 1318
H.R. 1319, H.R. 1530 AND H.R. 1570

Thursday, May 7, 1987
Room 2203 Rayburn HOB
9:45 a.m.

WITNESSES

The Honorable Lando W. Zech, Chairman, Nuclear Regulatory
Commission

Mr. T. C. McMeekin, Chief Engineer, Electrical Division,
Design Engineering Department, Duke Power Company

H.R. 1316

To amend the Atomic Energy Act to make it a Federal crime to carry or otherwise introduce or cause to be introduced any dangerous weapon or other dangerous instrumentality onto sites regulated by the Nuclear Regulatory Commission

H.R. 1317

To amend the Energy Reorganization Act of 1974 to clarify notification requirements for noncompliance, and for other purposes

H.R. 1318

To amend the Atomic Energy Act to provide criminal sanctions for an act of sabotage of a nuclear powerplant during its construction which would affect the public health and safety were it to go undetected

H.R. 1319

To amend the Atomic Energy Act to clarify that the Nuclear Regulatory Commission is authorized to protect from public disclosure certain sensitive generic safeguards information, the disclosure of which could negate or compromise site specific security measures

H.R. 1530

Western Low-Level Radioactive Waste Disposal Compact Consent Act

H.R. 1570

Nuclear Power Emergency Response Data System Act of 1987

STATEMENT
OF
T. C. MCMEEKIN
ON
H.R. 1570 - NUCLEAR POWER EMERGENCY RESPONSE DATA SYSTEM ACT
OF 1987
BEFORE
U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS
SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT
MAY 7, 1987

I. INTRODUCTION AND BACKGROUND

My name is T. C. McMeekin. I am Chief Engineer, Electrical Division, Design Engineering Department of Duke Power Company. I appreciate the invitation to appear before this subcommittee.

The purpose of my testimony is to provide Duke Power's perspective on H.R. 1570 - Nuclear Power Emergency Response Data System Act of 1987 and on the subject of Emergency Response Data Systems in general. I made similar testimony to this subcommittee on H.R. 5192 on August 11, 1986.

As a result of post-accident evaluation of the March, 1979 accident at Three Mile Island, there was significant activity in the development of emergency response capabilities. These activities resulted in numerous industry and NRC initiatives. This activity culminated in the development of several documents including NUREG 0737 (Clarification of TMI Action Plan Requirements), Supplement 1 to the NUREG 0737 (Requirements for Emergency Response Capability) and associated NUTAC (Nuclear Utility Task Action Committee) Guidelines on Emergency Response Capabilities.

H.R. 1570 - NUCLEAR POWER EMERGENCY RESPONSE DATA SYSTEM ACT
OF 1987
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II. CRISIS MANAGEMENT PHILOSOPHY

The Duke Crisis Management Plan was developed on the basis that four basic functions must be carried out in an emergency. They are:

- Plant Operation
- Accident Assessment
- Emergency Management
- Protective Action Recommendations

In the event of an accident, all functions are initially the responsibility of the station. After activation of the Crisis Management Center (CMC), the station is relieved of Emergency Management and development of Protective Action Recommendations. The station is always responsible for Plant Operation and Accident Assessment.

This approach was adopted because dynamic plant conditions can only be effectively assessed and managed by the on site staff. This staff has available current plant information which includes readings from plant monitors, measurements from test equipment, out of service status, physical damage assessments, and other subtle indicators. Such current information cannot be effectively transmitted off site.

III. DUKE EMERGENCY RESPONSE DATA SYSTEM

Duke, and the industry in general, has implemented crisis management plans, operating procedures, and related hardware to substantially improve emergency response effectiveness. These plans, procedures and systems were developed based on NUREG 0737 Supplement 1 requirements and associated NUTAC guidance and submitted for NRC review and approval.

The Duke Emergency Response Data System design considerations included user responsibility, importance of data validity, system reliability, etc. The system provides for on site real time data acquisition and off site data subsets which are periodically updated. On site NRC representatives have access to this same real time data and the off site NRC representatives have access to the periodically updated data subsets.

H.R. 1570 - NUCLEAR POWER EMERGENCY RESPONSE DATA SYSTEM ACT
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PAGE 3

IV. DUKE POSITION ON H.R. 1570

While we are always interested in evaluating better techniques for emergency response and in sharing plant information with the NRC, we have concerns with H.R. 1570. Although H.R. 1570 represents an improvement over H.R. 5192, we have several concerns related to the need, practicality, and cost for near real time data transmission to off site facilities. The concerns are summarized below:

Need

- o Given that plant information is currently available to the on site NRC staff through real time monitors and to the Region and Bethesda offices through periodically updated data subsets, we question the benefit of mandating an automatic electronic data transmission system.

Practicality

- o As a practical matter, automatically transmitted data will necessarily be incomplete as it relates to total plant status. It is simply impractical to transmit total plant status off site. Any type of electronic data transmittal will require voice supplement to ensure proper perspective. Recognizing the impracticality and that management of dynamic conditions must be done on site, we feel that near real time off site data transmittal is unnecessary.

Cost

- o Depending on the scope of the system; i.e., the number of measurements and the frequency of update; utilities could incur a substantial cost to develop and maintain an interface between the plant and the Emergency Response Data System.

Stability

- o To fully realize the benefits of the substantial modifications to plant design and operating procedures installed since the TMI accident, it is important that the industry have a period of regulatory stability.

H.T. 1570 - NUCLEAR POWER EMERGENCY RESPONSE DATA SYSTEM ACT
OF 1987
PAGE 4

o Other

In addition to the comments above, we have the following additional concerns on H.R. 1570:

- o It includes no clear limitations on the scope of the system or who the users may be.
- o Further, it would require additional information in support of electronically transmitted data which might further burden the utility in an emergency.
- o The proposed system is not limited to emergency use.
- o It is not clear that the official NRC recommendations would be limited to a single communication channel (e.g., the Senior NRC official at the CMC).
- o To date, the Emergency Response Capability requirements have been issued via a NUREG and utilities responded to an associated generic letter. The resulting action plan was confirmed through an NRC confirmatory order. If further emergency response requirements are warranted, we think a similar process would be appropriate.

V. SUMMARY

In summary, we have concerns related to the need, practicality, cost, and numerous scope uncertainties related to this Bill. We believe that current Crisis Management Plans adequately provide data for the licensees and the NRC to fulfill their responsibilities. In light of these comments, we do not feel that this Bill would be in the best interest of the nuclear industry. To the extent that enhancements are to be considered, we believe that the existing regulatory process is appropriate to evaluate and implement as appropriate. I urge this subcommittee to consider these comments in your deliberations. Thank you for the opportunity to appear before you today.

MAY 22 1987

MEMORANDUM FOR: William G. McDonald, Director
Office of Administration and
Resources Management

Edward L. Jordan, Director
Office for Analysis and Evaluation
of Operational Data

FROM: Victor Stello, Jr.
Executive Director for Operations

SUBJECT: COMLZ-87-29: EMERGENCY RESPONSE DATA SYSTEM CONTRACT

I concur with Commissioner Bernthal's suggestion to ensure that computer systems and telecommunications are fully integrated with long range plans for the entire agency and that automated systems be developed with as much flexibility and compatibility as feasible.

Accordingly and to assure clear lines of responsibility and authority are maintained, I am directing the following actions be taken: (1) AEOD continues to be the lead office for development and implementation of ERDS; (2) AEOD is to coordinate with IRM, and to actively involve IRM in the procurement and implementation of this system; (3) IRM is to establish and maintain an active and visible role in the procurement and management of ERDS, including establishing a point of contact to accomplish this objective in support of AEOD. As an initial step, the ERDS contract (Section F.1.1, Deliveries and Performance) should be modified to provide that a copy of the monthly letter report be delivered to IRM.

Finally, I expect you to keep me informed of your progress and if significant problems develop.

Original signed by
Victor Stello

Victor Stello, Jr.
Executive Director for Operations

cc: E. Halman, ARM/DC

~~8707210182~~ ip

PREPARED TESTIMONY
SUBMITTED BY
UNITED STATES NUCLEAR REGULATORY COMMISSION

TO

SUBCOMMITTEE ON ENERGY AND POWER
COMMITTEE ON ENERGY AND COMMERCE
UNITED STATES HOUSE OF REPRESENTATIVES

CONCERNING
H.R. 2683 (NRC LEGISLATIVE PROPOSALS) and
H.R. 1570 (THE NUCLEAR POWER EMERGENCY RESPONSE
DATA SYSTEM ACT OF 1987)
H.R. 3025 (APPALACHIAN LOW-LEVEL RADIOACTIVE
WASTE DISPOSAL COMPACT CONSENT ACT)

PRESENTED BY
LANDO W. ZECH, JR.
CHAIRMAN

~~8801120345~~ 18/pb

SUBMITTED: OCTOBER 1, 1987

6/12

Mr. Chairman, Members of the Subcommittee, I am pleased to appear before you today to discuss H.R. 2683--which consists of four legislative proposals that the Nuclear Regulatory Commission (NRC) submitted to Congress this year, H.R. 1570--the "Nuclear Power Emergency Response Data System Act of 1987", and H.R. 3025--the "Appalachian Low-Level Radioactive Waste Disposal Compact Consent Act." The Commission is most appreciative of the Committee's interest in these legislative proposals. Our testimony will begin with a discussion of H.R. 2683--the NRC legislative proposals.

H.R. 2683--NRC's Legislative Proposals

1. Section 1--Protection of Sensitive Generic Safeguards Information

The first section of H.R. 2683 would amend section 147 of the Atomic Energy Act to provide that the Commission is authorized to protect from public disclosure sensitive generic safeguards information when disclosure could compromise or negate site-specific security measures required by the Commission to protect nuclear materials and facilities against theft, diversion or sabotage.

In 1980 Congress added section 147 to the Atomic Energy Act. In that section Congress provided important protections against unauthorized disclosure of a licensee's or applicant's sensitive information related to the security of specific nuclear facilities and special nuclear materials. However, Congress did not enact a broadly written provision

for withholding generic information on safeguards matters from public disclosure.

As a result of its experience in implementing section 147, the Commission is aware of an ambiguity in that section relating to the Commission's authority to protect from public disclosure generic information that would be likely to endanger specific safeguards measures implemented by NRC licensees.

In its Diablo Canyon operating license proceeding, the Commission concluded that certain generic information regarding the design basis threat, specifically, that part of the design basis threat relating to the number of armed adversaries against which security plan characteristics are developed was an integral part of the licensee's security plan. The Commission determined that release of that information could reasonably be expected to provide substantial assistance to a potential saboteur of the Diablo Canyon facility. The Commission further determined that the information, although nominally generic, was properly considered a detailed portion of the applicant's plan and that the Commission was authorized under section 147 to protect that information from public disclosure.

The Commission believes that its interpretation of section 147 is correct. An interpretation contrary to the Commission's could negate the important protections provided by Congress for sensitive safeguards

information. Accordingly, the Commission believes it would be desirable for Congress to codify its authority to withhold and protect generic information of the nature discussed.

The Commission's concern is not limited to the Diablo Canyon situation addressed above. The Commission is also concerned that a court could find that section 147 does not provide a basis for withholding from public disclosure generic reports, studies and analyses of sabotage vulnerabilities. Such a holding would be inconsistent with the national interest in preserving effective safeguards.

Moreover, it appears that without clarification of section 147, a federal court which disagreed with NRC's interpretation of section 147 could order the NRC to release security-related information similar to or identical to that being protected by the Department of Energy pursuant to section 148 of the Atomic Energy Act. Even though it could be argued that NRC safeguards information is not as sensitive as DOE information because DOE facilities are of greater national security significance, public disclosure of certain sensitive generic safeguards information relative to NRC facilities could be of substantial assistance to one who contemplated sabotaging a DOE facility because the information might be identical. Accordingly, failure to amend section 147 could significantly negate the Congressional purpose underlying the enactment of section 148.

This legislation, if enacted, would not significantly increase the scope of information which the Commission may withhold from the public. Yet, by explicitly authorizing the withholding of a small class of sensitive safeguards information, Congress could help prevent any possibility that an alternative interpretation of section 147 could result in the disclosure of information that could be of assistance to a saboteur.

2. Section 2--Unauthorized Possession of Firearms

Section 2 of this bill would authorize the Commission to promulgate regulations which would prohibit a person who has not obtained prior authorization to carry, transport, or otherwise introduce or cause to be introduced any dangerous weapon, explosive, or other dangerous instrument into any facility, installation, or real property regulated by the Commission. Violation of the regulation would constitute a federal crime punishable by a \$5000 fine, imprisonment for not more than one year, or both. The Commission in promulgating implementing regulations would be authorized to determine the scope of the prohibition. The Commission's intent would be to limit the applicability of those regulations to those licensed nuclear facilities and materials which must be protected against theft or radiological sabotage.

This provision is needed because there have been an increasing number of reported incidents where persons without authorization have brought firearms into protected areas of NRC regulated sites. While the

Commission currently can and does impose sanctions against licensees for permitting unauthorized weapons or other dangerous instruments to enter the site, there is no federal law permitting the imposition of criminal sanctions against the person responsible for bringing the weapon or other dangerous instrument to the site.

We believe enactment of this proposal would assist our licensees in their efforts to safeguard those licensed nuclear facilities and materials which must be protected against nuclear theft or sabotage. In addition, enactment of this legislation would promote the national policy of maintaining comparable safeguards for similar nuclear materials and facilities in the public and private sectors. Under section 229a. of the Atomic Energy Act, unauthorized introduction of weapons or other dangerous instruments at nuclear facilities owned by the Department of Energy would constitute a federal crime. Enactment of this legislation would permit similar safeguards with respect to unauthorized introduction of weapons at NRC regulated nuclear facilities.

3. Section 3--Sabotage During Construction of a Facility

The third section of H.R. 2683 would amend section 236 of the Atomic Energy Act to make it a crime to sabotage or attempt to sabotage a nuclear production or utilization facility during its construction where the action, if it went undetected, could affect public health and safety. Currently, section 236 covers acts of sabotage to a utilization facility only after it has received its operating license from the Commission.

Sabotage during the later stages of construction, particularly during pre-operational testing, can be equally serious. For example, in 1984 a bag containing some parts was found inside a pipe which had been welded closed after it had undergone several pre-welding checks at a plant under construction. While this incident was determined to be negligence rather than sabotage, it demonstrated that an act of sabotage during construction could potentially have an adverse effect on public health and safety.

Sabotage during the late stages of construction is of special concern since most inspections which would have discovered the sabotage would have already occurred. Therefore, there is the possibility that the sabotage might not be discovered prior to operation. This proposed legislation narrowly defines the type of sabotage which would constitute a federal offense. The sabotage or attempted sabotage must be serious enough to have a possible effect on public health and safety if not discovered prior to operation.

We believe that enactment of H.R. 2683 is warranted to provide greater protection for the public health and safety by enacting criminal sanctions to deter such sabotage.

4. Section 4--Reporting of Violations or Defects

The fourth section of H.R. 2683 pertains to the Commission's ability to receive proper notice of defects or regulatory violations at nuclear power plants and other regulated activities, where such defects or violations could create substantial safety hazards.

Section 206 of the Energy Reorganization Act of 1974 provides that any individual director or responsible officer of a firm constructing, owning, operating, or supplying components of any facility or activity licensed or regulated under the Atomic Energy Act or the Energy Reorganization Act must promptly notify the Commission of violations of the Atomic Energy Act or any applicable regulation, order or license condition relating to substantial safety hazards or any defect which could create a substantial safety hazard. Any person who knowingly and consciously fails to provide notice is subject to a civil penalty.

Based on more than a decade of experience in implementing this statutory provision, we believe that some changes in section 206 are warranted. First, we believe that the section should be revised to provide that the firm, as well as individual directors and responsible officers should be responsible for notifying the Commission. This assignment of responsibility would be more in accord with the general approach to regulation under the Atomic Energy Act, which imposes responsibility on the licensee, rather than individual corporate officers for compliance with regulatory requirements. Under our proposal the current provision that a

civil penalty may be levied against individual directors and responsible officers for a knowing and conscious failure to notify the Commission would be retained. However, the proposed legislation would subject a firm to sanctions for any failure to notify, regardless of its intent or degree of negligence in failing to comply with the Commission's regulations. This would ensure that the failure to report violations or defects, regardless of the reasons for the reporting failure, would be subject to possible civil sanctions. This approach is in accord with section 234 of the Atomic Energy Act, which authorizes civil penalties for violations without regard to whether they are knowing and conscious.

H.R. 2683 would also clarify the Commission's authority to promulgate regulations, issue orders, and conduct inspections and investigations under section 206. These provisions would codify existing practice and remove any questions regarding the Commission's authority to take necessary actions to implement section 206.

The proposed legislation would also clarify that a firm, whether it be a licensee or a non-licensee, may be subject to a civil penalty for violating Commission regulations or orders issued to implement and enforce section 206, as well as for violations of section 206 itself. The current statute is ambiguous regarding the Commission's authority to impose sanctions against non-licensees, such as reactor vendors.

Section 4 would also make other amendments to section 206. The bill would clarify that the requirements of section 206 must be prominently posted on the premises of any firm affected by the section, and not simply at facilities licensed under the Atomic Energy Act. This would cover suppliers of components and other firms who are covered by section 206 but who are not regulated directly under the Atomic Energy Act.

Finally, the proposed legislation would subject the Department of Energy to the requirements of section 206 to the extent that the Department's activities, facilities or materials, are licensed by the Commission. The Commission believes the Department of Energy, to the extent it is subject to NRC licensing, should be subject to the same regulatory requirements as our other licensees.

In conclusion, the Commission believes that the adoption of these amendments would clarify the scope of section 206 and thereby ensure that the Commission has sufficient authority to implement effectively the notification requirements mandated by Congress.

H.R. 1570--The Nuclear Power Emergency Response Data System Act of 1987

H.R. 1570, as reported by the Committee on Interior and Insular Affairs, would require the creation of an Emergency Response Data System (ERDS). This system would provide for direct electronic transmission of selected parameters from nuclear power reactors to the Commission.

The Commission supports enactment of legislation for a system similar to that which would be required by H.R. 1570 as originally proposed because such legislation would substantially enhance our incident response capability.

The Commission has determined that NRC's primary role in an emergency is to monitor and advise. Our monitoring role is in two areas:

- ° We monitor the licensee to assure that appropriate recommendations are made with respect to offsite actions.
- ° We also monitor the licensee to assure they are taking the appropriate onsite actions to mitigate consequences of the incident.

Another aspect of our role is advisory:

- ° We support both the licensee and the onsite NRC response team with technical analyses, advice and logistical support.
- ° We also support offsite authorities including confirming licensee's recommendations for protective actions to offsite authorities.

Agency advice will be made by the NRC's Chairman (or his designee) to a licensee manager or the appropriate state or local decisionmaker. In addition, NRC is the single Federal focal point for keeping other Federal agencies and entities and the media informed on the status of the incident.

The effectiveness of the NRC in performing its role is dependent on the quality and timeliness of the event information the agency receives. The types of information the agency needs for emergency response are: reactor systems conditions, containment building conditions, radio-activity release rates, and the plant's meteorological data.

Currently, the data is transmitted to the NRC from the licensee by standard voice telephone communications. Two primary phone links are used. One is dedicated for reactor data; the other is primarily for radiological and meteorological data. Our experience with voice-only emergency communications--starting with TMI and reinforced numerous times since then--is that it can be too slow and prone to error. Information may be miscommunicated, frequently creating false issues which can divert attention from the real problems. Even worse, incorrect data can cause NRC to respond to the licensee or offsite officials with inaccurate or outdated advice.

NRC's thinking of how to enhance its incident response capability has evolved over several years. The NRC has considered various options

ranging from extensive continuous transmission of a large quantity of parameters from all facilities, to the current system in which we rely on telephone communications. The Commission has determined that an emergency response data system will provide the data in an accurate, reliable, and timely manner. We have successfully conducted tests of an ERDS concept with Duke Power Company at the McGuire facility and with Commonwealth Edison at the LaSalle and Zion facilities. Both tests confirmed the advantages of having direct electronic transmission of a selected set of parameters.

Based on these successful tests of the concept, the NRC initiated an ERDS Requirements Analysis. The analysis consisted of visits to the licensees to determine the design of the site data systems and the availability of the data requested by the NRC.

Based on the results of the surveys, the Commission believes an ERDS concept can be implemented with relatively little difficulty at essentially all sites. Ease of implementation will vary depending on type and utilization of licensee equipment. Implementation at some sites may require a delay until other equipment upgrades are completed.

In view of the large potential benefit to the NRC incident response capability from the ERDS and the results of the survey indicating the relative ease of implementation, the NRC currently plans to begin

implementation of the system on a voluntary basis. While we expect the majority of licensees will see the benefits of the system and will participate, there is no guarantee. H.R. 1570 would make implementation of a system mandatory for all licensees.

H.R. 1570, would require complete implementation within 3 years of passage. The current NRC implementation plan is phased over a longer period to accommodate current licensees' schedules for equipment upgrades. Passage of H.R. 1570 would require some licensees to accelerate their current schedules.

However, there is one aspect of the bill against which we caution: H.R. 1570 would require the Emergency Response Data System to be activated upon implementation and, thereafter, to transmit data to the NRC continuously except during system maintenance outages. This goes well beyond the NRC's concept of a data system designed solely to enable the NRC to carry out its emergency response role. The NRC had envisioned a system activated by the plant operator upon recognizing an Alert, Site Area, or General Emergency condition. Our estimate is that implementation costs for a system that continually transmits data might be five times that of the system envisioned by the NRC and because of its complexity might take an additional year to install. H.R. 1570 thus would require installation of an emergency response data system that is more complex than we contemplated and would be considerably more expensive to operate. When compared to the system recommended by the NRC, it would not appreciably increase the NRC's capability to perform its proper role in an emergency.

Attached to this testimony is an analysis of the costs of various alternative approaches.

It is our understanding that the Interior and Insular Affairs Committee adopted the continuous monitoring requirement because it believed that it would be useful to preserve certain pre-event data for NRC analysis. We believe this objective of transmitting to the NRC pertinent plant data, well in advance of the development of potentially serious plant conditions, could be achieved without continuously monitoring plant conditions. To accommodate the Congressional concern, we would recommend that the system be activated at the "unusual event" classification level. This classification occurs approximately 200 times per year and is at a sufficiently low threshold that our experience shows that data transmission would begin, in all cases, well before any serious plant emergency conditions develop.

In conclusion, we strongly support legislation which would require expeditious implementation of an emergency response data or similar system. This would greatly enhance our incident response capability. Of the possible approaches, we prefer the modified approach described above because we believe continuous transmission of data is unnecessarily costly and more difficult to implement. If legislation is enacted, we will work closely with States to help assure that the Emergency Response Data System supports them in attaining our common commitment to protect the health and safety of the public.

H.R. 3025--Appalachian Low-Level Radioactive Waste Disposal Compact
Consent Act

H.R. 3025 is before Congress so that the States of Pennsylvania, Maryland, Delaware and West Virginia, may obtain Congressional consent as required by the Constitution to enter into an interstate compact regarding the disposal of low-level radioactive waste.

We have reviewed the Compact and the proposed consent language and support enactment of H.R. 3025. Mr. Chairman, that completes my testimony.

Background

On Wednesday, July 1, 1987, the Committee on Interior and Insular Affairs reported H.R. 1570, the Emergency Response Data System (ERDS) bill. The bill was amended to require the ERDS to be activated upon implementation and to function continuously except during maintenance.

The current NRC Emergency Response Data System (ERDS) concept is a direct electronic data line from the electronic data systems of nuclear power facilities to the NRC Operations Center for use only during emergencies at the facilities. The data to be transmitted would be a limited set of parameters most likely available on the existing data computers at the sites. NRC would accept the data in a transmission format and at an update frequency convenient to the licensee and the licensee would control activation of the system.

The amendment to the bill would require the continuous transmission of data from all sites to the NRC Operations Center at all times with the capability of being monitored at the Operations Center.

The following analysis provides cost estimates for the data transmission options described above. The ERDS implementation cost estimate reflects the current budgetary proposals. The implementation cost estimate for H.R. 1570 ERDS is based on comparison estimates done in 1983 for the Commission and Congress. As with any estimate of this type the larger and more costly the system the greater the margin for error.

Cost Summary

	<u>NRC ERDS</u>	<u>H.R. 1570 ERDS</u>
Implementation	\$5.7 Million 1 FTE	\$25.0 Million 2-3 FTE
Operation	N/A N/A	\$3.0 Million/Year 7 FTE
Maintenance	\$570K/Year	\$2,500 K/Year

Cost Estimate

NRC ERDS:

The estimate for implementation of the NRC ERDS concept is \$5.7 Million over a five year implementation period. This includes NRC hardware, software, and contractor assistance. This does not include the effort by the licensees to modify their systems to output a data stream of the selected parameters to a modem for transmission to the NRC. This also does not include NRC FTE which is budgeted at one for the duration of implementation.

H.R. 1570 ERDS:

An estimate for implementation of the H.R. 1570 ERDS concept is \$25.0 Million. This includes NRC hardware, software, and contractor assistance. This assumes continuous transmission from all the facilities with a processing, screening, storage, and display system for this data at the NRC Operations Center. This does not include the effort by the licensees to modify their systems to provide a continuous data stream. This does not include the NRC FTE required to monitor implementation which would probably be increased by one or two.

Operation:

NRC ERDS:

Normal operating costs of the NRC ERDS are expected to be minimal. Data transmission costs are anticipated to be able to be incorporated in the current NRC communications requirements. No additional continuous staffing of the NRC Operations Center would be anticipated to be required. ERDS activations would be expected to average ten or less per year (the number of declared Alerts at the facilities).

H.R. 1570 ERDS:

Normal operating costs of the H.R. 1570 ERDS would require significantly more communications capability. Data transmission costs for approximately 100 dedicated lines operating continuously would be about \$3.0 Million per year. Due to the continuous transmission of data in this system the on shift staffing of the Operations Center should be increased by one which requires an increase in FTE of seven.

Maintenance:

NRC ERDS:

System annual maintenance costs are estimated to be approximately 10% of implementation costs. For the NRC ERDS concept this is \$570K/year.

H.R. 1570 ERDS:

\$2,500K/year.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

October 2, 1987

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MEMORANDUM FOR: Chairman Zech
Commissioner Roberts
Commissioner Bernthal
Commissioner Carr
Commissioner Rogers

FROM: John Bradburne, Director
Congressional Affairs, GPA

SUBJECT: SHARP SUBCOMMITTEE MEETS ON EMERGENCY DATA SYSTEM,
SAFEGUARDS AND APPALACHIAN COMPACT BILLS

On Thursday, October 1, the Subcommittee on Energy and Power held hearings on H.R. 1570, which establishes an emergency response data system for nuclear reactors; H.R. 2683, the NRC's legislative proposals for improving safeguards and reporting defects; and H.R. 3025, the "Appalachian States Low-Level Radioactive Waste Compact Consent Act." The Subcommittee later marked up and reported the NRC's legislative proposals and the Appalachian compact without amendment. The emergency response data system bill will be marked up next week.

The hearing was chaired by Rep. Philip Sharp (D-IN). Rep. Jerry Huckaby (D-LA) testified on behalf of his original data system concept, one that would be turned on only during emergencies at nuclear plants, rather than the continuous monitoring system reported by the Interior Committee. The Commission also favored the original system, but offered to require the system to be turned on during an "unusual event." The Commission urged approval of its legislative proposals and endorsed the Appalachian Compact.

Dr. Terry Lash, Director of the Illinois Department of Nuclear Safety, said that the Department has been continuously monitoring operations at commercial nuclear plants in Illinois for the past 2½ years. He endorsed continuous monitoring and felt that other states should be able to develop their own systems as long as those systems are compatible with the system required by the NRC.

Mr. Ron Harris, representing Duke Power company and ANEC, opposed H.R. 1570 because it appeared to move towards centralized control of reactor operations by the NRC. He added that continuous monitoring would weaken the operators' authority and responsibility and could shift nuclear power regulation from the NRC to the states. He suggested that as an alternative, utilities could store plant operating data for a few days, then "dump" the data to the data system in the event of an accident requiring monitoring.

Copies of written statements are available at CA.

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