

UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D. C. 20556

August 13, 1986

hearings EP

MEMORANDUM FOR: Commissioner Roberts Commissioner Asselstine Commissioner Bernthal FROM: SUBJECT: Continuerer, Director Office of Congressional Affairs SUBJECT: Conductor Office Of Congressional Affairs UDALL SUBCOMMITTEE HOLDS HEARING ON EMERGENCY RESPONSE DATA SYSTEM

On Monday, August 11, 1986, the Subcommittee on Energy and The Environment heard testimony on H.R.5192, "The Nuclear Power Emergency Response Data System Act of 1986." The hearing was chaired by Rep. Jerry Huckaby (D-LA), the bill's author. James M. Taylor accompanied by Edward L. Jordon and Kenneth F. Perkins, testified on behalf of the NRC. Ted C. McMeekin testified for Duke Power Company. Copies of written statements are attached.

NRC witness described the incident response program and the Emergency Response Data System (ERDS). Witnesses said the ERDS would eliminate a source of error in obtaining accurate and timely information during a nuclear incident. They speculated that if such a system had been operable during the Three Mile Island 2 accident, the NRC would have had more data to form pertinent questions, and perhaps, the right questions would have been asked. Staff also agreed that three years was a reasonable time to establish a nationwide ERDS.

Ted McMeekin described Duke Power Company's crisis management program and their ERDS. He said Duke generally supports the concept outlined in the bill but had a number of reservations. He suggested that the legislation limit the number of display parameters available to NRC. He also was concerned that the bill would establish a single technical system for each utility to use and that the bill did not contain federal preemption provisions to preclude similar state and local legislation. Rep. Huckaby pointed out that the provision in his bill to require a single system was intended as a federal preemption clause rather than setting technical requirements for ERDS.

Mr. McMeekin was also concerned that H.R.5192 did not clearly state that NRC would not have authority to intervene in plant operations. Rep. Huckaby asked Mr. McMeekin for draft language.

The hearing was adjoined after 45 minutes.

Attachments: As stated

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UNITED STATES NUCLEAR REGULATORY COMMISSION

TESTIMONY OF JAMES M. TAYLOR

BEFORE THE

SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

UNITED STATES HOUSE OF REPRESENTATIVES

CONCERNING H.R. 5192

THE NUCLEAR POWER EMERGENCY RESPONSE

DATA SYSTEM ACT OF 1986

SUBMITTED: AUGUST 11, 1986

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Mr. Chairman, I am James Taylor, the Director of the U.S. Nuclear Regulatory Commission's Office of Inspection and Enforcement. One of my responsibilities is to assure that the Nuclear Regulatory Commission is prepared to and capable of responding to a radiological emergency at a licensed nuclear facility. I appear before you today at your request to discuss HR 5192 titled "The Nuclear Power Emergency Response Data System Act of 1986."

NRC's Role

First, let me tell you what NRC's role is during an emergency. 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 time since then---, is that it is too slow and error prone. Information is misunderstood, frequently creating false issues which at best divert experts from the real problems. Even worse <u>incorrect data can cause NRC to respond to the licensee or offsite officials with inaccurate or outdated advice or recommendations</u>.

The NRC Emergency Response Data System

NRC's thinking on how to respond to these problems has evolved over the last several years from a rather extensive complex approach to data collection to what we now believe is an effective and appropriate approach to collect the information pertinent to fulfilling our role in an emergency. NRC is now proposing to implement a data transmission system called the Emergency Response Data System or "ERDS." The ERDS concept is a direct electronic transmission of selected parameters available from existing electronic data systems located in the licensee's own emergency response facilities. The ERDS would be for use only during emergencies at the facilities. It will be activated by the licensees during declared emergencies to begin transmission of the selected set of parameters to the NRC Operations Center. NRC currently plans to implement the system on a voluntary basis while we continue to evaluate the systems implementation. Further we plan to accept the data in the format and at the update frequency that the current licensee system car. provide. The ERDS would be supplemented with voice transmission of essential data not available on the licensee's system rather than require a modification to the existing system. Minimal backfitting on plant systems would be required in that licensees would only have to provide one additional output port on their Safety Parameter Display System or other Emergency Response Facility data system. No personnel would be required for acquisition, transmission, or receipt of data on ERDS.

A primary advantage of ERDS is accuracy and reliability because there are no human interfaces, and many systems (such as the Safety Parameter Display System) will incorporate automatic data validation from the utilities data

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hase. Timeliness is excellent because the system is immediately available and capable of rapid transmission with frequent updating. The data we will get from the site data system will be particularly pertinent since the primary objective of the Safety Parameter Display System is to provide the licensee with a tool for quickly assessing the overall status of plant safety,---the same nee: that the NRC faces. Remaining voice communications would be directed toward plant conditions and plant response rather than individual instrument readings.

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 the successful tests of the concept, the NRC initiated an ERDS Requirement Analysis. The effort consists of visits to the licensees to determine the design of the site data systems and the availability of the data requested by the NRC. A system design will be developed as well as detailed equipment specifications and cost estimates provided. Site visits have already taken place to survey 40 units.

Based on results of these initial surveys, our conclusion is that the concept can be implemented at essentially all sites. Ease of implementation will vary depending on type of equipment and extent of utilization. Implementation at come sites may require a delay until other equipment upgrades are completed. In some cases these equipment upgrades are not in current plans and

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implementation of the ERDS on the schedule described in the bill will require expediting plant equipment upgrades.

The requirements analysis will be complete in early 1987 with actual site implementation starting later in the calendar year. Implementation at all sites is phased through the next several years in recognition of when certain site Safety Parameter Display System upgrades will be available.

ERDS Costs

Under our current approach ERDS implementation costs to NRC at each unit are expected to average abouc \$50 thousand. There will be significant variation between sites depending on the site Safety Parameter Lisplay System and data transmission configuration. Licensee costs are expected to be about half the NRC site costs. Although the requirements analysis will more accurately determine the cost of implementation, total cost to NRC is expected to be about \$6 million.

Differences Between ERDS and HR 5192

After giving you an overview of the ERDS, I would like to mention three significant differences we see between the NRC course with ERDS and HR 5192.

First, at this time the NRC plan is to seek voluntary participation by licensees. While we expect the majority of licensees will see the benefits of

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the system and will participate, there is no guarantee. HR 5192 would make implementation mandatory for all licensees.

Second, HR 5192 proposes complete implementation within three years of passage. The NRC implementation plan is phased over a longer period to accommodate current licensee schedules for implementation of their Safety Parameter Display System upgrades. Passage of HR 5192 will require some licensees to accelerate their current schedules

Lastly, HR 5192 provides for full reimbursement of ERDS cost by licensees via the Emergency Response Data System Fund.

Importance of Emergency Response and Conclusion

I would like to conclude by saying that the NRC takes its emergency response role very seriously. The NRC recognized through its post-Three Mile Island Lessons Learned the importance of being able to support and provide recommendations to the licensee managers and offsite decisionmakers. As evidence of the importance we attach to this role, I want to point out that we exercise our emergency response organization on a bimonthly basis. We have recognized that there is a problem in performing that role using the current voice-only emergency communication system. We are committed to correcting the problem and have considered a range of alternative solutions. We have determined that the most appropriate, cost-effective solution is the Emergency Response Data System. We are pursuing ERDS with the intent to begin implementation in late 1987. While the Commission has not provided written comments on H.R. 5192, the Commission has endorsed for further evaluation and study an emergency response data system which is similar in concept to that which your bill would authorize.

To the extent your bill would assure all plants were on the system and would expedite implementation of the system, I wholeheartedly endorse the bill. I am pleased to have the opportunity to meet with you today to discuss the NRC's emergency response data communication needs.

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STATEMENT

OF

T. C. MCMEEKIN

ON

H.R. 5192 - EMERGENCY RESPONSE DATA SYSTEM ACT OF 1986

BEFORE

U.S. HOUSE OF REPRESENTATIVES

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT

AUGUST 11, 1986

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. 5192 - Emergency Response Data System Act of 1986 and on the subject of Emergency Response Data Systems in general.

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. 5192 - EMERGENCY RESPONSE DATA SYSTEM ACT OF 1986 PAGE 2

II. CRISIS MANAGEMENT PHILOSOPHY

The Duke Crisis Management Plan was developed on the basis that an accident should be managed by the on site staff in the short term and that off site technical support should be available for longer term recovery actions.

This approach was adopted for two fundamental reasons. First, dynamic plant conditions can only be effectively assessed by the on site staff. This staff has available total current plant information which includes measured parameters, out of service status, physical damage assessments, and other subtle indicators. Such current information cannot be effectively transmitted off site. Secondly, the experienced on site staff is most familiar with the plant specific features and plant operating characteristics.

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.

The Duke Emergency Response Data System design considerations included user responsibility, user qualification, 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.

IV. DUKE POSITION ON H.R. 5192

While Duke generally supports the concepts outlined in the bill, we have the following concerns:

 The bill does not limit data transmission to site emergency conditions.

H.R. 5192 - EMERGENCY RESPONSE DATA SYSTEM ACT OF 1986 PAGE 3

IV. DUKE POSITION ON H.R. 5192 (CONT'D)

- The bill does not specifically define limitations on requirements for implementation of the emergency response data system.
- The bill would require a single transmission system which could not be practically interfaced with the numerous variations of systems.
- The bill makes clear that the program staff does not have the authority to relieve the operator of the responsibility to maintain his reactor in a safe operating condition. It should also be clear that the program staff does not have authority to intervene in plant operations.
- The bill does not contain Federal preemation provisions to preclude similar State or County legislation.
- Licensees should not be required to contribute funds for NRC activities related to the establishment and operation of emergency response data systems. Such activities should be funded through existing NRC appropriation channels.

V. SUMMARY

. . .

Duke supports the emergency preparedness concepts before this subcommittee. However, we have concerns related to limitations on requirements for implementation, practicality of implementation, authority over plant operation, lack of Federal preemption provision, and source of funding for the program. Finally, we believe that current Crisis Management Plans adequately provide data for the licensees and the NRC to fulfill their responsibilities. I urge this subcommittee to consider these comments in your deliberations. Thank you for the opportunity to appear before you today.



[Senate, July 2, 1986 - Offered by Senator Edward P. Kirby.]

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Eighty-Six.

SENATE, July 2, 1986.

Ordered. That, a special joint committee to consist of six 2 members of the senate, to be appointed by the president of the 3 senate, and eleven members of the house of representatives, to be 4 appointed by the speaker of the house, to investigate and study the 5 Pilgrim Station nuclear generating facility at Plymouth. Said inves-6 tigation and study shall include but not be limited to: (1) the effect on public safety of the operation of the Pilgrim nuclear generating 8 facility at Plymouth; (2) the response of the Boston Edison Company and the Nuclear Regulatory Commission to findings of inadequate or less than excellent performance at the Pilgrim nuclear 9 generating facility at Plymouth; (3) whether there is danger from 10 12 escape of radiation, and the severity of any past escapes or emana-13 tions of radiation from the Pilgram nuclear generating facility, and 14 the effects thereof on public health; (4) the adequacy and prac-15 ticability of planning to prepare for any emergency which may 16 affect public safety, including the plans of the Massachusetts Civil 17 Defense Agency, and its relations with the Federal Emergency 18 Management Agency; (5) present methods by which the common-19 wealth finances such planning, acquisition of supplies, equipment, 20 facilities and personnel for such planning, and the execution of such plans, including provisions for evacuation of all segments of popu-22 lation and provisions for their shelter; (6) the clarification of juris-23 dictional questions as between state agencies and between the 24 commonwealth, its subdivisions, and the federal government of the 25 United States; and (7) the effect of the presence of the Pilgram 26 nuclear generating facility on the municipal fiscal affairs of the 27 town of Plymot h and surrounding communities.

28 Said committee (1) shall be provided with quarters in the state 29 house or elsewhere; (2) may expend for expenses and for expert.

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30 legal, clerical and other assistance such sums as may be appro-31 priated therefor: (3) may travel within the commonwealth: (4) may 32 hold hearings; (5) shall report to the general court the results of its 33 investigation and study and its recommendations, if any, together

34 with drafts of legislation necessary to carry its recommendations 35 into effect by filing the same with the clerk of either branch; and (6)

36 may report from time to time but shall file its final report not later

37 than the first Wednesday of September, nineteen hundred and 38 eighty-six.

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99TH CONGRESS H. R. 5192

To establish an emergency response program within the Nuclear Regulatory Commission.

IN THE HOUSE OF REPRESENTATIVES

JULY 17, 1986 1.

Mr. HUCKABY (for himself, Mr. UDALL, Mr. SEIBEBLING, Mr. WEAVER, Mr. COELHO, Mr. MUBPHY, Mr. EMEBBON, Mrs. BYRON, Mr. TAUZIN, Mr. RAHALL, Mr. MCCAIN, Mr. LIVINGSTON, and Mr. ROEMER) introduced the following bill; which was referred to the Committee on Interior and Insular Affairs

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A BILL

To establish an emergency response program within the Nuclear Regulatory Commission.

Be it enacted by the Senate and House of Representatives of the United State's of America in Congress assembled, SECTION 1. SHORT TITLE.

4 This Act may be cited as the "Nuclear Power Emer-5 gency Response Data System Act of 1986".

6 SEC. 2. EMERGENCY RESPONSE PROGRAM.

7 (a) ESTABLISHMENT. — There is established within the 8 Nuclear Regulatory Commission, an Emergency Response 9 Program.

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(b) LOCATION.—The Program Office shall be located in
 close proximity to the Nuclear Regulatory Commission's
 Headquarters Operations Center.

4 SEC. 3. FUNCTIONS.

(a) SYSTEM DEVELOPMENT .- The Program Staff, in 5 6 addition to prompt screening of operating events and other responsibilities that may be determined by the Commission, 7 shall establish a single data transmission system for providing 8 to the Nuclear Regulatory Commission (or any other entity 9 10 which may so require) the data needed to perform the Nuclear Regulatory Commission's incident response role described 11 in subsection (c). The system shall include automatic elec-12 tronic data transmission for use in the event of an emergency 13 at a commercial nuclear power reactor in accordance with 14 15 subsections (b) and (c).

16 (b) DATA TEANSMISSION .- The operator of each commercial nuclear power reactor licensed under section 103 or 17 104 b. of the Atomic Energy Act of 1354 (42 U.S.C. 2133 18 19 or 2134(b)) shall, upon declaration of an Emergency Class of Alert, Site Area Emergency, or General Emergency as spec-20ified in the licensee's approved Emergency Plan, or upon re-21 quest by the Nuclear Regulatory Commission Operations 1 1:1 23 Center, transmit data by automatic electronic means, to the 24 Nuclear Regulatory Commission Operations Center to assist 25 Nuclear Regulatory Commission in determining-

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(1) the severity of the abnormal condition of such 1 2 reactor; 3 (2) the actions necessary to mitigate any offsite consequences of the event; and 4 5 (3) whether appropriate recommendations are 6 being made with respect to offsite radiological protec-7 five actions. (c) INCIDENT RESPONSE .- The Program staff shall 8 ensure the capability of the Nuclear Regulatory Commission 9 to carry out the incident response role described in para-10 11 graphs (1) and (2). (1) MONITOBING .- The Nuclear Regulatory Com-12 13 mission response personnel shall, in an emergency de-14 scribed in subsection (b), contemporaneously and con-15 tinuously monitor the data transmitted by operators of commercial nuclear power reactors described in subsec-16 17 tion (b). 18 (2) ASSESSMENT AND SUPPORT .---19 (A) IN GENEBAL. The Nuclear Regulatory 20 Commission response personnel shall, in an emer-21 gency as described in subsection (b)-22 (i) assess the abnormal operating condi-23 tions in such reactors; fort a

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	1 (ii) assess the appropriate recommended
	2 protective action to minimize any offsite con
	3 sequences of the event: and
	4 (iii) support the licensee by providing
	5 suggestions and recommendations and recommendations
	6 the assessments and recommendations relating to
	7 (ii)
((B) ASSESSMENT AND BECOMMENDA-
5	TIONS.—The Nuclear Regulatory Commission
10	personnel shall-
11	(i) maintain sufficient knowledge of acci-
12	dent status to assess the adequacy of licensee
13	actions to mitigate consequences; and
14	(iii) recommend protective action
15	(C) LINGTATION D
16	tor DIMITATION Program staff shall have
	no authority to relieve the operator of the com-
17	mercial nuclear power reactor of responsibility to
18	maintain his reactor in a safe operating condition
19	(d) PLANT SPECIFIC INFORMATION The operator of
20	any commercial nuclear power reactor described in subsec
21	tion (b) shall provide to the Nuclear Regulatory Commission
22	such information as is required to evaluate the data to
23	ted in accordance with such subsection.

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1 SEC. 4. PERSONNEL QUALIFICATIONS.

2 The Nuclear Regulatory Commission response person-3 nel shall have the training and expertise necessary to perform 4 the functions described in section 3.

5 SEC. S. FUNDING.

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6 (a) NUCLEAR REGULATORY COMMISSION.—Except as 7 provided in subsection (b), and to the extent provided in ap-8 propriation Acts, the Nuclear Regulatory Commission shall 9 pay all costs associated with the data transmission functions 10 described in section 3.

(b) EMERGENCY RESPONSE DATA SYSTEM FUND .---11 (1) ESTABLISHMENT. -- There is established in the 12 13 Treasury a special fund to be known as the Emergency Response Data System Fund in this subsection re-14 15 ferred to as the "Fund"). The fund shall be available 16 to the Nuclear Regulatory Commission without fiscal 17 year limitation and in such amounts as may be speci-18 fied in appropriation Acts for the purpose of compen-19 sating the Nuclear Regulatory Commission for cost incurred in the installation or operation, or both, of the 20 21 data transmission system described in section 3 at commercial nuclear power reactor sites. 22

(2) PAYMENTS BY LICENSEES.—Each commercial
nuclear power licensee of the Nuclear Regulatory
Commission under sections 103 and 104 b. of the
Atomic Energy Act of 1954 (42 U.S.C. 2133 or

1. 12. . . .

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2134(b)) shall pay into the Fund each fiscal year an 1 2 amount determined by the Nuclear Regulatory Commission to be attributable to the cost of the installation 3. . or operation, or both, of such data transmission system 4 at a commercial nuclear power reactor facility of such 5 6 licensee in such fiscal year. 7 SEC. 5. DEFINITIONS. 8 As used in this Act---(1) "commercial nuclear power reactor" means 9 any commercial nuclear power reactor licensed by the 10 Nuclear Regulatory Commission under section 103 or 11 104 b. of the Atomic Energy Act of 1954 (42 U.S.C. 12 13 2133 or 2134(b)); and (2) "program" means the Emergency Response 14 Program established under section 2. 15 SEC. 7. COMMENCEMENT OF OPERATION. 16 The data transmission capability described in section 3 17 shall be operational not later than three years after the date 18 19 of the enactment of this Act.

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[9-16-86]

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AMENDMENT TO H.R. 5192 OFFERED BY MR. HUCKABY

Page :, line 8, strike 'single'.

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Page 2, line 15, add after the period the following new sentence: 'The system shall be the exclusive such system in the United States.'.

Explanation

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This amendment clarifies the intent of Section 3(a) that no other entity shall supersede the the Federal government in providing an emergency data response system.

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[9-16-86]

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AMENDMENT TO H.R. 5192 OFFERED BY MR. HUCKABY

. .

Page 4, line 17, insert 'authority or' after 'of'.

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Explanation

Section 3(c)(2)(C) makes clear that the NRC program staff does not have the authority to relieve the operator of the responsibility to maintain his reactor in a safe operating condition. This amendment clarifies also that the program staff does not have the authority to intervene in plant operations. 1016

(9-16-86)

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AMENDMENT TO H.R. 5192 Offered by Mr. Huckaby

Page 5, line 11, strike `(b)' and all that follows through the period on page 6, line 6, and insert the following:

(b) EMERGENCY RESPONSE DATA SYSTEM FUND .-- There is 1 established in the Treasury a special fund to be known as the 2 Emergency Response Data System Fund. The Fund shall be 3 available to the Nuclear Regulatory Commission without fiscal 4 year limitation and in such amounts as may be specified in 5 appropriation Acts for the purpose of compensating the 6 7 Nuclear Regulatory Commission for costs incurred in the installation or operation, or both, of the data transmission 8 system described in section 3 at commercial nuclear power 9 10 reactor sites.

Explanation

This amendment effectively deletes Section 5(b)(2) which requires licensees to contribute funds for NRC activities related to the establishment and operation of emergency response data systems. It retains Section 5(b)(1) requiring that such activities be funded through existing NRC appropriation channels.