



OHIO PUBLIC INTEREST RESEARCH GROUP

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TESTIMONY OF KATHY WESTBY AND JANIS WHITE

BEFORE THE CITIZENS COMMISSION ON NUCLEAR POWER IN OHIO

May 5, 1979

Mr. Chairman and Members of the Commission:

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My name is Janis White and this is Kathy Westby. I am the Director and Kathy is a volunteer with OPIRG, the Ohio Public Interest Research Group, a statewide, university based research and advocacy organization particularly concerned with issues of consumer and environmental protection.

We are here today to discuss the emergency evacuation plans for the Davis-Besse nuclear power plant in northern Ohio. You each should have a fact sheet we prepared on evacuation planning entitled Background Paper on Emergency Evacuation Planning for Nuclear Students in Ohio.

As you can see, utility companies and the state share the responsibility for developing and implementing the evacuation plans, but the state alone has the legal authority to order an actual evacuation. The utility plan, in this case prepared by Toledo Edison, outlines both in-plant and off-site procedures. The section here on federal regulations lists the items which the NRC suggest the plan include.

The NRC also has suggested guidelines for the state emergency plan which are summarised for you on pages 3 and 4. The Ohio Disaster Services Agency has been designated the principal planning agency in the state.

For the past several months, three other Oberlin students and I have been investigating the emergency evacuation plans for the Davis-Besse Nuclear Power Station. After obtaining copies of the utility plan and state draft plan, we

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reviewed them to see if they complied with NRC guidelines. We also contacted officials designated with responsibilities in the plan by letter and/or phone to see if they were aware of their role in the event of a nuclear emergency.

On the basis of this research we have concluded that the evacuation plans are inadequate. Both plans fail to comply with all the NRC guidelines, contradictions exist between the two plans, and officials are not always aware of their responsibilities. I shall briefly outline some of these problems.

A major problem in the evacuation plans centers around the notification order of support groups. Let me give you one example. According to the utility plan it is the responsibility of the plant shift foreman to contact the state agencies once a nuclear disaster has been declared. The agencies notified include the Oak Harbor Fire Department, Medical Assistance, and the Ottawa County Sheriff. However, according to the state plans it is the responsibility of the D-B station (specification) to contact the Ottawa County Sheriff who then contacts the support agencies. When we interviewed the shift foreman we were told that he contact Toledo Edison who would in turn contact the sheriff who was responsible for notifying other agencies. We feel this kind of confusion about the proper order of notification of support groups would seriously affect the smooth functioning of the evacuation plans and the safety of the public.

Another area in which there are many serious deficiencies is the medical support section of the plan. The Magruder Memorial Hospital which has been contracted by D-B to provide radiological care of victims is located only 11 miles from the plant, well within the radiation zone. The second hospital specified in the plans is the U. of Penn. hospital in Philadelphia. No pre-arranged plans for transporting victims exist and a Magruder administrator was unaware that the U. of Penn. was their back-up hospital. When we asked the Magruder administrator if he felt prepared for nuclear disaster he said he "felt reasonably well prepared, but that he believed in

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Murphy's Law - anything that can go wrong, will." He also estimated that the hospital could only handle a maximum of 80 seriously injured radiological victims.

This planning shows a definite lack of awareness about the seriousness of a nuclear accident. According to the August 1974 Rasmussen Report, thousands of people would be injured. The general naivete about the effect of radiation was most clearly expressed in our interview with a fire official. He told us that "We don't have any of that wicked stuff (meaning radiation) here at the plant. Besides, the stuff we do have decays quickly." He said he had formulated this opinion based on information he had received from Davis-Besse officials.

The Ottawa County Sheriff and Engineer also felt prepared to handle a nuclear disaster because of their experience with floods, tornados, and other natural disasters. Apparently they are unaware that a serious nuclear accident could affect an area the size of Pennsylvania (according to an early NRC study, WASH 740). This is an especially important point since the current area covered by the evacuation plans is a 2 mile radius around the plant. There are plans to expand the evacuation radius to 10 miles, but this would still exclude Toledo which is only 35 miles from the plant. All of the relocation centers for victims are located well within the 20 mile radius.

Besides the serious problems with the plan, both the utility and state plans fail to comply with all NRC guidelines. There are a number of omissions in both plans. The utility plan does not include: expected accident assessment time, expected time required to notify the population, estimate of evacuation times for areas which would be affected, estimates of traffic capacities of egress routes, and arrangements with contiguous states. The state plan does not include: planning coordination with nearby states, a population chart by sectors around the plant, an account of institutions and transient populations which may impair mobility, egress routes and their traffic capacities, and plans for yearly drills and exercises.

Janis will now outline a series of recommendations we have to improve the

OPIRG is very concerned about the state of evacuation planning in Ohio. We want to be sure that the public will be adequately protected in case of a nuclear accident. We have several suggestions which we think would greatly improve the present situation.

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First, we believe that the state should be required to monitor radiation levels around the plant. Currently, it is the utility only which monitors radiation, but the state which has to order an evacuation if necessary. We see an inconsistency here when the state is totally dependent on the utility for information. We believe the state should also monitor radiation as a checks and balances for public safety. The results of such monitoring should be reported to the appropriate state and federal agencies as well as to the public which ^{has} the right to know what the radiation levels are in their air, water, and land.

OPIRG recommends the dissemination of information to the public about radiation hazards and what to do in case of an emergency. The state and the utility company may have a plan for evacuation, but if no one knows about it until an accident occurs, it may not do us much good. The Cincinnati Enquirer reported last month that while the state has prepared evacuation instruction for the public, ~~they did not plan to distribute them until an accident actually happens.~~ I was pleased to hear this morning that Col. Williams office has recommended to the Governor that these instructions be printed on newsprint before Davis-Besse is put back in operation. Our concern however, is with the distribution of these plans. We hope that these newsprint instructions will be broadly distributed to the public and not simply made available through the Department of Transportation. We also believe that the utility companies should be required to send out this type of information once a year as an insert in customers' bills. This should be part of their responsibility for public safety which they accept when they decide to build a nuclear power plant.

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We believe that annual drills based on the evacuation plans should be required. Other states have conducted full-scale drills with instructive results. On August 2, 1977 a drill was carried out at the Salem I plant in New Jersey.

One newspaper reported that the drill provided officials with a chance to see how well elaborate communication lines would work. The answer in most cases was "not at all." During a drill held in Colorado on January 12, 1978, utility personnel neglected to tell off-site officials how much radioactivity was being released or what direction it was moving in. Eleven days later, a real, unplanned release of radioactive helium gas forced the same plant to be evacuated. Utility personnel made the same mistake they had made during the drill! In fact, if the decision had been made to evacuate the nearby population based on data supplied from the utility, people would have been moved from a safe sector south of the plant to a contaminated sector west of the plant. Evacuation plans for these plants have since been revised to better protect the public. OPIRG's information from some of the officials we interviewed near the Davis-Besse plant is that they have never participated in a full scale drill. Our educated guess is that if such a drill were held, serious flaws would emerge in the plans. We urge you to recommend that the state and the utility company hold full scale coordinated drills once a year. One note: a full scale drill does not have to include an actual evacuation; it can basically be a telephone drill to make sure that the proper authorities would be notified in the event of the real thing. The important consideration is that all personnel should be involved: utility, state, and local.

Finally, we would also like to see the state establish more stringent regulations for their evacuation plans that are consistent with the real dangers of a nuclear emergency. Kathy has outlined some of the major flaws in the current plans which we believe should not be allowed to exist. The Davis-Besse plant should not be allowed to operate until the state has finalized its "draft" plan and we have more than a fundamental, rudimentary plan for Ottawa county. I will grant you that it takes some time to complete these things, but Davis-besse should not be on line until our public officials can give us a more optimistic appraisal of the situation, in case of a real accident.

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To conclude, I'd like to tell you that OPIRG's suggestions are largely corroborated by a year long study released a month ago by the General Accounting

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Office. According to the summary, only 10 of the 43 states with nuclear reactors meet all the NRC's recommended emergency planning standards. Only 9 states have conducted full scale drills and 16 have never tested their plans at all. The GAO recommended annual emergency drills and a coordinated effort to disseminate information to the public on the hazards of reactor accidents and protective actions that can be taken.

Thank you for this opportunity to speak. We would be happy to answer any questions.

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State and Utility Evacuation Plans:

Are They Inadequate?

Utility companies and the state share the responsibility for developing and implementing emergency evacuation plans in the event of a nuclear accident. The Nuclear Regulatory Commission requires the utility company to file a plan dealing with both in-plant and off-site procedures. The state plan delineates the roles and responsibilities of off-site agencies involved in evacuation procedures.

Evacuation plans for the Davis-Besse nuclear power plant have been developed by the Toledo Edison Co. and the Ohio Disaster Services Agency (draft plan).

OPIRG has analyzed whether the Toledo Edison plan and the State of Ohio plan meet federal standards. Officials named in the two plans were also contacted by letter and/or phone to find out what they believe they are supposed to do in case of a nuclear emergency.

Failure To Meet Federal Guidelines

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Both plans fail to meet some of the recommended federal guidelines.

The utility plan does not contain: the expected accident assessment time
the expected time required to notify the population
estimates of evacuation times for the areas which would be affected
estimates of the traffic capacities of egress routes
arrangements with contiguous states

The state draft plan does not contain: planning coordination with nearby states
a population chart by sectors around the plant
an account of institutions and transient populations which may impair mobility
egress routes and their traffic capacities
plans for yearly drills and exercises

Ambiguities and Contradictions

The following chart compares what the plans state should happen with what the officials interviewed believe they would do:

THE PLANS SAY:

1. SHIFT FOREMAN

Utility Plan: evaluates accident, notifies off-site support groups in case of emergency, contacts other plant officials, county sheriff, medical assistance and fire department if needed.

State Plan: does not specify who from

THE OFFICIALS SAY:

would contact Toledo Edison - company would then contact sheriff.

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- plant notifies off-site support groups.

II. COUNTY SHERIFF

Utility Plan: contacts Ohio and Ottawa County Disaster Services Agencies, initiates emergency notification system, sets up road blocks and other evacuation procedures.

State Plan: notifies all county and state agencies involved, notifies residents in affected area, designates road blocks.

would contact relevant agencies and help evacuate people.

III. OTTAWA COUNTY ENGINEER

Utility Plan: assist in traffic control and back-up communications.

State Plan: provide barriers, make equipment and manpower available, support evacuation, assist in door to door notification.

would help evacuate, notify public, set up road blocks, assess equipment and get more help if needed.

IV. OHIO DISASTER SERVICES AGENCY

Utility Plan: work with sheriff to determine evacuation routes and relocation centers, arrange for food, lodging, and medical care.

State Plan: not mentioned in text.

have prepared draft state plan - doesn't deal with evacuation routes, does have list of potential care centers for Ottawa county.

V. OTTAWA COUNTY DISASTER SERVICES AGENCY

Utility Plan: not mentioned in text.

State Plan: evacuate residents, identify and prepare evacuation centers, arrange for 10 days support, coordinate emergency planning with other county agencies.

consists of one employee who believes his role is after the disaster, would contact Ohio Disaster Services Agency for help, said he would play minor role.

VI. FIRE DEPARTMENT

Utility Plan: contacted if needed.

State Plan: assist sheriff with public notification, assist in evacuation procedures and fight any fires.

would help put out plant fires (however do not have any special equipment at Department for fighting radiological fires), would help with public notification.

VII. MEDICAL SUPPORT

A. AMBULANCE SERVICE

Utility Plan: provided by Robinson Funeral Home, Oak Harbor.

State Plan: not mentioned in text.

no longer provided by Robinson Funeral Home - sold to Carroll Township Emergency Medical Service - unable to find supervisor there.

B. MAGRUDER MEMORIAL HOSPITAL , Port Clinton

Utility Plan: radiation emergency area ready if needed, have special

could handle up to 80 serious cases of radiation exposure, informal agree^{1240 175}

equipment.

State Plan: not mentioned in text.

ments with other area hospitals to handle overflow.

C. UNIVERSITY OF PENNSYLVANIA HOSPITAL, Philadelphia

Utility Plan: second facility named to handle radiation exposure cases.

State Plan: not mentioned in text.

not contacted (Magruder Hospital administrator not aware that University of Pennsylvania Hospital is the back-up hospital).

D. RADIATION MANAGEMENT CORPORATION

Utility Plan: provide training and evaluation of emergency medical plans.

State Plan: not mentioned in text.

did not respond to OPIRG letter.

VIII. TOLEDO EDISON CO.

Utility Plan: release public information.

State Plan: not mentioned in text.

Public Relations staff person knew little about plan or procedures.



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The Blade, Toledo, Ohio, April 27, 1979.

U.S., States Termed III-Prepared For Atomic Emergencies

NRC Conducting Inquiry, Is Subject Of Investigation

WASHINGTON (AP) — Two separate investigating panels are being told that federal and state officials are ill-prepared and poorly coordinated to cope with nuclear emergencies like the one at Three Mile Island.

A presidentially appointed panel is looking at the Nuclear Regulatory Commission's performance.

And the NRC itself is considering whether to temporarily shut down for safety review and revisions eight plants with design features shared by the unit at Three Mile Island that malfunctioned March 28.

All eight were designed by Babcock & Wilcox Co., which built the Three Mile Island plant near Harrisburg, Pa. They include the Davis-Besse plant near Port Clinton, O.

While the NRC was taking a new, critical look at nuclear plants it had previously licensed as safe, an 11-member commission appointed by President Carter opened its investigation of the NRC Thursday.

William Wilcox, head of the Federal Disaster Assistance Administration, told the commission the NRC "lacks both the carrot and the stick to encourage adequate state and local government preparedness for radiological accidents."

Mr. Wilcox said that federal agencies have given too little attention to emergency planning.

John Kemeny, chairman of the new presidential commission, said that the NRC's role would be one of the things it would investigate.

NRC Chairman Joseph Hendrie told the commission that the federal agency is conducting its own inquiry, describing it as "a sweeping investigation ... to understand where our proceedings, the way we license these plants, have failed to prevent the Three Mile Island accident."

NRC Lists Only 11 States With Endorsed Emergency Plans

As Mr. Hendrie was appearing before the presidential commission, his four fellow commissioners were hearing reports of inadequate state planning from their own emergency preparedness specialists.

Those specialists have been struggling to review and approve state plans with a staff of three professionals and one secretary.

Harold Collins, assistant director of emergency preparedness, and Harold Gaut, coordinator of field operations, summarized the present situation, in which only 11 states have nuclear emergency plans in which the NRC has concurred.

NRC Has No Authority

Those states are Alabama, California, Connecticut, Delaware, Florida, Iowa, Kansas, New Jersey, New York, South Carolina, and Washington.

Pennsylvania is among 17 states with operating nuclear power plants but no NRC-endorsed emergency plans, they

said.

The NRC requires electric utilities to have emergency plans to deal with nuclear power-plant accidents within the plant property and to coordinate with local authorities. But the NRC has no authority to require state or local governments to prepare emergency plans or make them conform to the guidelines it has developed.

Can Only Offer Help

It can only offer its help and place its stamp of approval on plans by "concurring" in them if they meet its standards.

Mr. Gaut said that it may take about a year before the U.S. Government can place its stamp of approval on plans designed to enable Ohio to cope with a nuclear emergency.

Mr. Gaut said that Ohio "has pieces" of such plans, but has had trouble getting neighboring Kentucky to agree with them.

A nuclear plant is being built in Moscow, O., across the Ohio River from Kentucky, and an accident there would affect both states.

Michigan has also had "a bit of a problem," but now expects to submit a plan in about a year, Mr. Gaut said.

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Frequency Of Errors By Personnel At Davis-Besse Is Under NRC Study

Number Called Unusually High

By MICHAEL WOODS
Blade Science Editor

WASHINGTON — The U.S. Nuclear Regulatory Commission is trying to determine why the Davis-Besse Nuclear Power Station near Toledo continues to be plagued by an unusually high number of personnel errors.

James Keppler, director of NRC's Chicago regional office, said the frequency and potential seriousness of mistakes made by plant personnel have given Davis-Besse one of the poorest reputations for operator precision in the region.

The Chicago regional office oversees 21 nuclear power plants spread through a broad section of the Midwest.

Many of the personnel errors at Davis-Besse have been minor, Mr. Keppler said. But others have involved crucial safety systems, where mistakes carry the potential for the most serious kinds of nuclear reactor accidents.

Turned Off Wrong Valves

Mr. Keppler cited, as an illustration, one incident last month in which a plant

operator was supposed to turn off a specific valve at the facility. Instead of turning off the correct valve, he turned off two other valves — a mistake that partially inactivated the reactor's crucial emergency core cooling system.

The Toledo Edison Co., which has charge of operations at Davis-Besse, may be fined for the incident, Mr. Keppler said. Toledo Edison is co-owner of Davis-Besse, along with the Cleveland Electric Illuminating Co.

Davis-Besse has come under sharp NRC scrutiny in recent weeks in the aftermath of the accident at the Three Mile Island nuclear power plant near Harrisburg, Pa.

Davis-Besse's reactor is a sister to the reactor at Three Mile Island, both having been built by the nuclear engineering firm of Babcock & Wilcox. In addition, NRC has identified malfunctions similar to those at Three Mile Island that occurred in less serious form early in the operating life of Davis-Besse.

Shutdown Urged

The plant's continuing problem with personnel errors, which Mr. Keppler discussed during an interview Thursday, are an additional factor.

Mr. Keppler said that mistakes by per-

sonnel operating Davis-Besse became so worrisome that an NRC inspector recently urged Mr. Keppler to shut the plant down and keep it closed until the situation could be corrected.

Davis-Besse currently remains shut down, following a scheduled outage for maintenance. Mr. Keppler said he does not intend to order Edison to keep the plant shut — partly because of assurance from Toledo Edison President John Williamson that operation will not resume until the personnel problem is solved.

No Action To Prevent Restart

NRC has taken no action that would prevent Edison from restarting the plant immediately. Technically, all Edison would have to do is notify NRC of its plans to "go critical" with the plant.

Another factor, Mr. Keppler said, is that Edison personnel at the plant do seem capable of operating the facility in a "passable" fashion.

If he were to rate operator performance there on a "pass-fail" basis, Mr. Keppler said he would confer a passing grade.

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THE BLADE: TOLEDO, OHIO, FRIDAY, APRIL 20, 1979

Davis-Besse Personnel Errors Under Study

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But he also indicated that on a scale of A, B, C, D, or F, he probably would grade plant personnel performance with a "D."

Transcripts of a closed NRC meeting held here April 5, a week after the Three Mile Island incident, mention Davis-Besse's continuing problems. John Davis, acting director of NRC's office of inspection and enforcement, noted during the meeting: "If we did have a rating system of A, B, C, we would put Davis-Besse C on this scale. It should be a better plant."

Mr. Keppler acknowledged that personnel errors do tend to be more frequent during the early months of operation at any new atomic power plant, when the staff is new and relatively inexperienced. And, indeed, personnel errors were more frequent at Davis-

Besse in the months following startup in August, 1977.

But personnel errors have remained unusually high at the plant and show no indication of dropping off after two years of operating experience.

Poor Motivation, Discipline

The reasons, Mr. Keppler said, are perplexing. Among the possibilities being considered by NRC are inadequate training of the operators, poor motivation, and poor discipline. Ironically plant personnel scored well on the federal licensing examination for reactor operators, Mr. Keppler noted.

Mr. Keppler said that Edison realizes that there have been problems with personnel at the plant and has agreed to submit a plan for correcting them.

Mr. Williamson said Thursday he has made a personal decision to keep Davis-

Besse shut down until he is certain that operation can resume safely.

Performance of plant personnel has improved recently, Mr. Williamson said, noting that operators — some of whom are former navy personnel with reactor experience — have been trained well.

Assuring Complete Safety

Some of the plant operators will be trained shortly in new procedures stemming from the Three Mile Island incident. Training will be on a computer simulator at the Babcock & Wilcox nuclear facility in Lynchburg, Va.

The primary concern at this point is assuring complete safety of the plant and not the economic impact of the shutdown, he noted. Mr. Williamson said it probably will be a matter of weeks, rather than days or months, before the plant is set to resume operations.

Nuclear troubles at Davis-Besse

*Transcripts reveal a history,
replete with worrisome flaws*

By Daniel T. Biddle

A few miles west of Port Clinton, the farmhouses and trailer parks by Lake Erie are dwarfed by a giant, gently curving cylinder and a bullet-shaped dome.

Toledo Edison Co. and Cleveland Electric Illuminating Co., reckoning that northern Ohio and the rest of the nation will someday rely on electricity generated by nuclear reactors, committed years of construction and \$650 million to build the Davis-Besse nuclear power plant.

Now, after the Three Mile Island accident, America's nuclear future is being questioned. On Friday, the Nuclear Regulatory Commission ordered Davis-Besse and five similar plants shut down until the accident's safety lessons are learned.

Davis-Besse had been shut down March 30 for what officials said was maintenance.

For Davis-Besse, however, the order is only the latest event in a history of problems, miscalculations, alleged bad management and potential danger to the public.

This disturbing history is reflected in interviews with federal inspectors, reactor experts and company officials, and most visibly in thousands of pages of NRC documents and closed-meeting transcripts.

From the NRC comes a deep concern with Davis-Besse that ranges from regulatory minutia, such as occasionally inadequate record keeping and imperfect fire-drill coordination, to botched safety testing, crucial design defects and failures to cope with events that could trigger an emergency like Three Mile Island — or worse.

Inspectors' reports say the plant's management, even after repeated NRC cajoling, has not greatly im-

proved this record since Davis-Besse started generating in August 1977.

Executives at Toledo Edison, which operates the plant, say they are dissatisfied with the amount of human error and particularly with the high number of shutdowns. Davis-Besse has only generated power during about half its working life.

But the men who run Toledo Edison and CEI, the plant's 51% owner, contend Davis-Besse is impeccably safe. They say Three Mile Island was a great learning experience for them and other reactor operators, and they still consider the giant towers and bullet-shape dome symbols of future U.S. energy independence.

During many hours of debate in Washington last week, Toledo Edi-

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★ From First Page

son's nuclear experts told the NRC that Davis-Besse has a far better design than Three Mile Island, and already has adopted most of the changes that were ordered on Friday.

Lowell E. Roe, Toledo Edison facilities development vice president, told the commissioners "there is no undue risk in permitting continued operation" of reactors designed, like Three Mile Island, by Babcock & Wilcox Co. (B&W). "There is added assurance in regard to the Davis-Besse unit."

Roe listed the differences between his plant and Three Mile Island, and tried to assure commissioners that Toledo Edison was reacting swiftly and thoroughly with minor equipment changes and new instructions for reactor operators.

Records show the NRC's inspectors and top officials have, since late 1977, gotten the opposite impression of Davis-Besse's management and operations.

And much of this impression, records show, is based on failures to test, maintain and properly operate crucial safety equipment that Toledo Edison says will keep Davis-Besse from becoming another Three Mile Island.

On October 24, 1977, NRC officials met with Toledo Edison executives and plant supervisors. A month earlier, for no known reason, the plant went halfway into its automatic response to a small coolant feedwater leak. This left water in the steam generator at a dangerous level.

Then a valve failed. In the reactor's core, where nuclear fission passes its intense heat to water, temperatures and pressure skyrocketed. A pump responded too slowly. Finally, operators started backup pumps and ended this "transient," nuclear jargon for something out of the ordinary.

Nineteen months later, NRC reactor-regulation chief Harold W. Denton would cite this Davis-Besse transient in exerting a divided commission to shut down all B&W plants because of unsafe design.

So would James S. Creswell, the NRC inspector who tried to raise questions about this design problem 11 weeks before the same problem contributed to the worst nuclear accident in U.S. history at Three Mile Island.

Creswell, after many inspections at Davis-Besse, had urged his bosses to consider closing the Port Clinton plant indefinitely. Beyond the design question, Creswell told NRC Regional Director James G. Keppler, Toledo Edison had repeatedly shown it was incapable of running a safe plant.

But in the October 1977 meeting, according to NRC records, no one was suggesting anything so serious as a shutdown. NRC's Division of Inspection and Enforcement (DIE), the agency's so-called police force, wanted Toledo Edison to get busy on better emergency plans, tougher training and more thorough equipment testing. The firm promised to comply.

Nearly 10 months later, the NRC's Keppler, Thomas N. Tambling, chief inspector for Davis-Besse, and two other inspectors met

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with H. Toledo Edison off, including Roe. The Tambling-Keppler team reported the meeting's purpose and topics.

"To summarize past enforcement actions and operating problems regarding taken to improve management control and plant operations ... problem areas identified in the management meeting held October 24, 1977, and the fact that many of these items still persist."

The report cited Davis-Besse's numerous "noncompliances" or violations of NRC administrative and safety requirements, and "event reports" on transients, equipment failure and other problems of varied importance.

"The majority of noncompliances are associated with failure to properly follow procedures. A large portion of events associated with personnel errors and procedural deficiencies ... A review of problem areas indicates staffing weaknesses at both the plant and engineering level. Specific areas are in core physics, and instrumentation and controls ... significant problems associated with these areas," the report said.

The NRC team said it was particularly concerned about bad wiring and startup problems in Davis-Besse's safety features actuation system (SFAS). The flaws went undetected from August 1977 until an SFAS test on June 2, 1978.

The SFAS performs vital, automatic functions during certain transients and potential emergencies.

In September 1978, SFAS trouble was deemed so serious that NRC's top officials took over. A letter from reactor-inspections director Norman C. Moseley to Toledo Edison President John P. Williamson

"Because of the significance of the defects ... the enforcement aspects of this case have been escalate from the Regional Office to Headquarters for handling."

Moseley said the SFAS trouble should have been detected in tests done before Davis-Besse began operation.

NRC records are thick with Toledo Edison's detailed responses to the government's charges. The company promised many times to retrain its personnel, overhaul and test equipment, rewrite operators' manuals and perform new computer analyses of transients — just as it had promised, much later, to do these things in response to the B&W plant shutdown order.

Despite these pledges NRC inspectors still found problems large and small.

A can of radioactive waste was placed in an improperly marked storage area, potentially exposing workers to radiation.

Fire protection equipment and fire drills were found deficient, and the NRC had to press the company to provide a tight schedule of improvements.

The list also included failures to properly test safety equipment. In late January inspectors reported finding inoperable radiation monitors being used to check radiation in some plant equipment, tanks, water lines and storm sewers.

Toledo Edison also reported several problems with its backup diesel generators — a power source

considered crucial in the event of a loss of power, particularly at B&W plants.

Williamson, whose title changed last week from president to chairman, Public Relations, Vice President John H. Dyer, and Roe, who has probably had the most contact with the NRC, have all contended in recent weeks that Davis-Besse was going through something akin to growing pains.

They said they fully expect the plant's operations to improve.

Keppler, Tambling and other NRC officials agreed that most nuclear plants have some troubles in the first year or so — particularly when the plant is a company's first nuclear venture.

But these officials said they had hoped Davis-Besse would show clear improvement by now. Instead, said Tambling, "They've had probably more equipment problems than others ... They've gone through some transients. And personnel errors — in the last five months, there's been three fairly significant ones."

Tambling, a soft-spoken man who admits with a chuckle that his initials are TNT, declined to give his opinion on whether Davis-Besse's problems were serious enough to warrant permanent shutdown.

Instead, he described the three recent errors he considers significant: accidental disconnection of circuits for reactor-containment spray pumps and cooling fans ("It's very significant when you take two engineered safety features out of operation"); erroneous opening of emergency-pump valves; and failure to detect and thaw a frozen water line, which, by Toledo Edison's own analysis, probably have

The fine line was found in early January. Despite the NRC's 30 day reporting rule, it wasn't reported to Tambling until two months later.

Last week Toledo Edison reactor specialists Frederic Miller and Eugene C. Novak told Denton and other NRC staffers these high-pressure pumps were reliable in emergencies.

The NRC had scheduled a third meeting earlier this month with Toledo Edison officials to demand better performance.

The Three Mile Island accident forced an indefinite postponement.

The accident also brought a wave of public interest in nuclear safety. A congressional subpoena forced the NRC to publish unofficial transcripts of closed meetings held since the accident, and these transcripts contain candid criticisms of Davis-Besse and other plants.

During an April 5 meeting, reactor-inspections chief Moseley reported that Keppler, the regional director "feels there have been a large number of personnel errors" and ranked Davis-Besse as one of the worst in his 21-plant region.

Keppler has since confirmed these comments.

Noting that the plant got a "C" on the commission's A-B-C scale, Moseley said, "If it goes lower than C, we would have justification to shut it down."

Toledo Edison's Dyer said most of the plant's personnel errors can be attributed to wrongly written procedures rather than human error and have been corrected.

CEI Chairman Karl H. Rudolph called the NRC's inspectors' negative comments speculation. Asked if Davis-Besse's record makes him worry about CEI's \$330 million investment, he said emphatically, "not a bit."

Toledo Edison plans to build two more reactors at Davis-Besse, and CEI is building two at North Perry, O. The first of these won't be completed for at least three years.

Meanwhile, CEI's publicity office promotes nuclear power with brochures and a leaflet titled, "How Likely is a Nuclear Accident?" It cites an NRC study saying the chances are nil.

The NRC has since rejected that study.

NORTH SHORE ALERT
Box 5636
Cleveland, Ohio 44101
861-6945 (days)

TOLEDO EDISON'S RECORD OF SAFETY

THE PLAIN DEALER

OHIO'S LARGEST NEWSPAPER

CLEVELAND, FRIDAY, APRIL 20, 1979

Established 1877
Cleveland Publishing Co.
Local Services

Second class mail
Post Office Cleveland

Davis-Besse to restart Wednesday

By Daniel R. Biddle

Toledo Edison Co. is preparing to start the Davis-Besse nuclear power plant next Wednesday, a Nuclear Regulatory Commission official said last night.

John H. Keppler, director of NRC's regional headquarters, and NRC field inspectors at the plant, about 70 miles west of Toledo, were informed by Toledo Edison plant personnel of the startup date.

Toledo Edison operates the plant,

which is owned jointly by it and Cleveland Electric Illuminating Co.

While Keppler said he is satisfied that the plant is safe, he acknowledged that Davis-Besse has had numerous "personnel errors" and said that the NRC might impose fines on Toledo Edison for two such errors that occurred this year.

Plant officials declined comment last night on a possible startup time. NRC inspectors at the plant, near Port Clinton, could not be reached for comment.

Keppler's comments to The Plain Dealer came a day after the NRC released transcripts of an April 5 meeting in which officials considered keeping the 906-megawatt nuclear plant shut down. It was shut down for what officials said was routine maintenance on March 30.

And he spoke only moments after Toledo Edison President John P. Williamson had assured a reporter that the firm would not hurry its safety review before restarting. "I don't think I should speculate (about

a startup date) at this point," Williamson said.

"I have told our people I want a thorough job, and I don't want to put any pressure on them."

Stressing his concern for safety, Williamson stated twice that he had initiated a meeting yesterday with Keppler to review the NRC of precautions being taken at Davis-Besse — which is similar in design to the reactor that malfunctioned at Three Mile Island.

But Keppler had a different ver-

sion. He said his meeting with Williamson had been scheduled two weeks ago but was postponed because of the Three Mile Island accident. "The meeting was called by the NRC," he said. Keppler said he wanted to make the company "acutely aware" of the NRC's concerns about Davis-Besse personnel errors.

Keppler said the problems were not enough, in his judgment to warrant a continued shutdown. To order such a shutdown, he said,

"You have to have a very serious potential safety problem, and just a nagging gut-ache."

But he confirmed the NRC's concerns about two events at Davis-Besse that had been reflected in transcripts of the April 5 meeting of commissioners and other officials.

The events, Keppler said, included Toledo Edison's failure to thaw a frozen pipeline but fail in the reactor's safety systems.

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Davis-Besse



From First Page

a March "valve mistake" that temporarily jeopardized part of the all-important emergency core cooling system.

The NRC may decide to fine Toledo Edison for these errors.

Keppler said, The fines are \$5,000 per item but Keppler said he favors legislation that would hike this to \$100,000 per item.

Toledo Edison extended its original shutdown when the NRC ordered all plants similar to Three Mile Island to review key equipment and safety systems.

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NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20585

Docket No. 50-346

JUN 29 1979

Mr. Lowell E. Roe
Vice President, Facilities
Development
Toledo Edison Company
Edison Plaza
300 Madison Avenue
Toledo, Ohio 43652

POOR ORIGINAL

Dear Mr. Roe:

This letter is to express our concern over the failure of Toledo Edison Company (TECO) to bring to the attention of the NRC Staff members evaluating the Company's compliance with the Commission's confirmatory order of May 16, 1979, Reportable Occurrence (RO) #79-062 at Davis-Besse 1. We have several questions, set forth below, relating to TECO management's awareness of this event, and the reason for failure to discuss this event in communications with the NRC Staff documenting the actions taken in response to the May 16 Order.

By letter of April 27, 1979, TECO committed, among other things, to "continue to review all aspects of [the auxiliary feedwater] system to further upgrade components for added reliability and performance." The commitment was confirmed and required by paragraph IV(1)(a) of the Commission's May 16, Order.

On May 21, 1979 Reportable Occurrence 79-062, involving inoperable auxiliary feedwater (AFW) suction pressure switches and out-of-tolerance pressure setpoints, occurred. This was reported to NRC's Region III, Office of Inspection and Enforcement by letter (LER 79-062) of June 15, 1979. Despite, however, numerous meetings and exchanges of correspondence between TECO and NRC concerning the reliability of the AFW system, the event was not brought to the attention of the members of the Staff's Bulletins and Orders Task Force evaluating compliance with the May 16, Order. To the contrary, by letter of May 23, 1979 from L. Roe (TECO) to R. Reid (NRC) identified by three LER's since January 1978 involving the AFW system; no mention was made of the May 21, 1979 event.

Similarly Messrs. D. Ross, G. Mazetis, and R. Capra of NRC visited Davis-Besse 1 and talked with L. Roe, T. Murray (The Station Superintendent) and other TECO personnel on June 8, 1979. The subject of AFW LERs was on the meeting agenda and the NRC Staff was again informed that there had been only 3 LER's since January 1978. Again, no mention was made of the May 21 event.

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DUPLICATE

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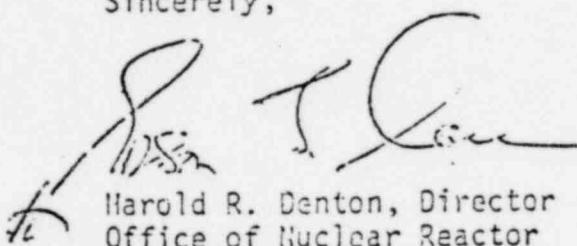
Mr. Lowell E. Roe

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A Staff Safety Evaluation (SE) containing the evaluation of TECO's compliance with the Commission's May 16 Order was finalized on June 27 and provided to you on that date. On page 6 of that SE we discuss "the 3 failures of AFW system components from January 1978 to date" of which NRR had knowledge. Additional evaluation, and supplementation of the SE will be required in light of LER 79-062. In addition to the required technical evaluation from TECO needed to comply with the terms of the Order, we will require answers to the following questions concerning TECO's policies and practices with respect to informing TECO management and NRC about potentially unsafe conditions:

1. At the time of the May 23 submittal stating that only 3 AFW failures had occurred since January 1978, was Mr. Roe aware of RO 79-062? If not, explain why not, and when was he made aware of it. If the answer is yes, explain why the event was not discussed in the May 23 letter. Also explain why TECO did not supplement the May 23 letter to discuss the May 21 event or raise the matter in the numerous discussions with NRC concerning AFW reliability.
2. Explain why the May 21 event was not brought up at the June 8, 1979 discussions between NRC and TECO personnel on AFW LERs. We have been informed that at the June 8 meeting the Station Superintendent, Terry Murray, was unaware of RO 79-062. Is this correct? If the answer is yes, explain the TECO policy about timeliness of reporting potentially unsafe conditions to DB-1 and TECO management. Also, discuss who within TECO management was informed of RO 79-062 and when and how were they so informed.

Sincerely,



Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

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NRC Expected To OK Start-Up Of Davis-Besse

Agency Told Safety Order Met By Edison

By FRANK KANE
Blade Washington Bureau

WASHINGTON — Officials of the staff of the Nuclear Regulatory Commission today were expected to give final approval to a resumption of operations at the Davis-Besse Nuclear Power Station, which has been shut down since March 30.

The plant, near Port Clinton, was shut down originally for routine maintenance, but Toledo Edison Co. officials later kept it out of service voluntarily for a safety analysis following the Three Mile Island nuclear accident. In mid-May, the NRC ordered it to remain shut down pending some personnel retraining, equipment modifications, and other actions to be taken by Toledo Edison.

Officials of the NRC staff told the commission Thursday that they are satisfied that Toledo Edison has complied with conditions of the order and can resume operations.

But they withheld final approval until the company agreed to make some commitments for improving fire protection and until the NRC staff had a chance to further investigate the reported breakdown of a valve on the plant's auxiliary feed water system Wednesday night.

Satisfied NRC Requirements

Denwood Ross, of the NRC's office of nuclear reactor regulation, said late Thursday that Edison had satisfied the requirements for commitments on fire protection, and that in all probability the valve motor failure was nothing serious. But staff officials wanted to think about it overnight before giving the final go-ahead, Mr. Ross added.

Toledo Edison officials said that the earliest the plant might resume operations is early next week.

James Keppler, director of the NRC's Chicago regional office of inspection and enforcement, who had been critical in

the past of personnel errors at the Davis-Besse plant, said that he endorsed the decision to permit it to resume operations.

Resident Inspector Slated

He said that there have been almost daily inspections at the plant since the Three Mile Island incident and that, starting in August, his office will have a resident inspector on site.

He also has been meeting with top officials of the company and they have made definite commitments to improve matters at the plant, including increasing the size of the technical staff, long-range improvements in training, bringing in an outside consultant to review the adequacy of plant procedures, and establishment of a personnel group to investigate all reported incidents at the plant.

Mr. Keppler also seemed to be impressed by the recent naming of Wendell Johnson as company president. He is a "technical man," appears to be on top of problems, and has started meeting with plant personnel to get first-hand knowledge of plant problems, Mr. Keppler said.

Mr. Keppler told commission member John Ahearn that although Toledo Edison has had its problems with Davis-Besse in the past, he believes the company does have the technical and management capability to deal with the problems.

Failure To Report Malfunction

Harold Denton, director of the office of nuclear reactor regulation, said: "I'd be willing to let them start up and demonstrate that they are on top of problems. But the situation should be monitored carefully."

There was a brief discussion of Edison's failure to promptly report a May 21 malfunctioning in the auxiliary feed water system, but Mr. Keppler indicated that this was due to a misunderstanding by company officials of what type of failure had to be reported promptly to the NRC.

The NRC staff also ran through a review of short-term steps that Edison had taken to gain start-up permission,

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including personnel training, a written examination taken by personnel, and some equipment modifications and procedure changes.

NRC also has ordered some long-term modifications which Edison will be expected to accomplish as promptly as practicable.

Board To Be Picked To Hold Hearing Sought By Lawmaker

The commission Thursday approved directing the chairman of the Atomic Safety and Licensing Board panel to select a board to conduct a hearing requested by State Sen. Tim McCormack (D., Euclid).

The hearing will involve the issue of whether the actions Toledo Edison has been ordered to take are sufficient to insure safe operation of the plant. Merely holding such a hearing, however, would not block resumption of plant operations, the commission said.

Senator McCormack, in a May 3 letter to the commission, had said that the plant should not resume operations until the people of northern Ohio are assured through public hearings that there can be no foreseeable risk to their safety and health through a nuclear accident.

Both the Davis-Besse and Three Mile Island plants were built by the nuclear division of Babcock & Wilcox Co.

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