

FOIR:  
VIL 57

STATEMENT OF DENNIS P. SAUNDERS

My name is Dennis P. Saunders. I have over sixteen years of experience in systems design and analysis, technical management systems design, and structural analysis. I have worked as a Pipe Stress Engineer on many nuclear power plant construction job served as a Consulting Engineer and Stress Analyst on still other nuclear facility construction projects. I have extensive project management experience in a variety of areas of high technology.

The purpose of this statement is to call attention to situation and circumstances related to the construction of the Midland (Michigan) nuclear power plant by the Bechtel Corporation and its subcontractors (including A.P. Engineering) for the Consumers Power Company. It is my expert opinion that, despite the good intentions of parties involved, certain situations continue to exist at this facility which involve a serious risk to the health and safety of the citizens of Michigan and quite possibly the citizens of surrounding states and Canada.

I have attempted to work for the resolution of these potential dangerous situations through the normal channels for more than a year. To date, significant effort has been expended on the part of many of the participants: Consumers Power Company, The Bechtel Company, A.P. Engineering, the Nuclear Regulator Commission, and last, but not least, by myself. These efforts have been extensively documented, but there remain safety-related issues which have not been adequately addressed. After attempting to have them resolved within the organizations constructing the Midland Nuclear Power Plant. I found my services as a pipe stress engineer and consultant were suddenly no longer needed, even though demonstrably much work remained to be done. According to written documentation by Consumers Power, significant amounts of overtime was expended by pipe stress engineers after I was terminated.

In attempting to follow-up on this potentially dangerous situa I was informed by the Vice President of Consumers Power Company, Mr. James W. Cook, that "we feel there can be no more gained from our continued interaction with you at this time, and there is no interest by Consumers Power in retaining your services at the Midland Nuclear Plant." Further, my concern and efforts to determine if the changes required by the Nuclear Regulatory Commission had been implemented were character by Mr. Cook as "disruptive and unproductive." He also requested that I have no further contacts with any of "our people"--includi by implication everyone working at the construction site as well as those employed by Consumers Power directly.

Starting from the time, four days after the NRC issued an Immediate Action Letter with regard to inadequate construction practices and management, when I contacted management to report

the continuation of the situation which led to the issuance of the letter by NRC, to the present, I have observed systematic attempts to remove me from the scene. I was identified as the one filing the allegations of non-compliance. I was fired from my job. It appears that efforts have been made to discredit me as a technical expert and attempts on my part to obtain employment elsewhere have been unsuccessful. It is my belief, based on the data which I have been able to obtain from the NRC and other sources, that situations and circumstances which are potentially dangerous to the public welfare and safety continue to exist at the Midland Nuclear Power Plant.

The balance of my statement is a chronological and detailed summary of events, including the issuance of further calls for corrective action by the NRC which support the allegations which I have made, and which I, being unable to gather information to the contrary, must reluctantly continue to make.

DETAILED STATEMENT OF EVENTS INVOLVING DENNIS P. SAUNDERS  
AND THE CONSUMERS POWER CO. MIDLAND NUCLEAR POWER PLANT

On March 2, 1981, I signed a letter contract with A. P. Engineering to provide expert services, through them, to the Consumers Power Co. Midland Nuclear Power Plant construction project.

On May 22, 1981, the Nuclear Regulatory Commission conducted an inspection of the facility and issued an Immediate Action Letter that day. This order required a halt in the issuance of fabrication and construction drawings for the installation of safety-related small bore pipe and piping suspension systems until the following corrective actions were taken:

- 1) up-to-date specifications and procedures must be placed in work areas;
- 2) training for all personnel involved with performing stress analysis of piping was to be improved; and
- 3) a review was to be conducted of all isometrics which formerly lacked supporting calculations.

The essence of the problem was that the small-bore piping systems were being installed without accurate and reliable engineering analysis of the stresses they were subject to when installed.

On May 26, 1981, in accord with the requirements of the 1954 Atomic Energy Commission Act, section 223, stating the responsibilities of persons observing acts of commission or omission which potentially threaten the safety and welfare

of citizens (and specifying civil and criminal penalties for non-compliance), I reported my concerns about apparent violations of the letter and spirit of the NRC Immediate Action Letter to both A. P. Engineering and Bechtel management. Although some corrective efforts were underway, non-conforming activities also continued. In the four days following the issuance of the IAL (a very serious matter), no efforts were made or were being made to bring the project into compliance on procedures for field modifications of piping suspension blueprints. These changes in design, called redlining, were being made without the required calculations. Only preliminary calculations were being done, rather than what are called committed preliminary design calculations (CPDC), which were what Bechtel Resident Engineering mandated. In my meeting that day with Bechtel Resident Assistant Project Engineer, Pat Corcoran, and Bechtel employees Tom Supplee and Jim Reinsch, I informed them that piping suspension redlines had been approved despite their lack of CPDC's. An Allegation Evaluation was drawn up including the substance of my comments and an indication by Bechtel that the problem did, in fact, exist.

On May 27, 1981, A. P. Engineering tried to transfer me from the night shift where I was the senior M.E. and involved with the "total picture" to a lesser position on the day shift. The intervention of Mr. Tom Supplee, Bechtel Chief Engineer on the night shift, prevented this action from occurring.

On May 28, 1981, Pat Corcoran issued a letter to Bechtel upper management indicating that the NRC May 22, 1981 IAL had been complied with. At the same time, I personally observed that no corrective action had been taken on the redlining problems Bechtel had admitted did exist the previous day. Pipe and piping systems continued to be installed without the required stress calculations.

On June 12, 1981, my contract with A. P. Engineering was canceled as of that day. I could not really believe that this was happening to me. There were supposed to be regulations preventing this type of action. I was not told that my work was in any way unsatisfactory. As a result, I felt that I would probably be hired directly by Bechtel or Consumers Power to continue working on the project.

On June 15, 1981, I called Bechtel and A. P. to urge them to continue compliance with the AEC Act, section 223.

On June 17, I held another meeting in my office. Present were Bob Whittaker of the Midland Project Quality Assurance Department (a CPC employee), Fred Youny, Tom Supplee, Pat Corcoran, and Kirby Bushong. Bob Whittaker assured me that an investigation would be undertaken. I agreed the project should resolve the issue itself if it could be done quickly

and minimize exposure to civil and criminal penalties specified by the 1954 AEC Act.

On June 15, Bob Whittaker, Pat Corcoran, and I met again and I restated my desire to have the problem corrected by CPC and Bechtel, but quickly.

At some point on or about this time, however, Mr. Don Miller, Consumers Power Co. Site Manager, intervened. My personal contacts with him led me to think that he was more concerned with possible publicity of the problem than he was with its solution. I do not know what actions he took relative to the resolution and elimination of the problem.

On June 29, 1981, Mr. Miller called me to complain about recent articles in the newspaper about the Midland project. He seemed very concerned that this type of publicity should not happen in this case. I found out later that on this same day, Mr. Miller wrote to Mr. Cordell Williams of the Nuclear Regulatory Commission, Region III, assuring him that all the allegations had been investigated and that the matter was under control. Mr. Miller related to me the substance of a conversation that he had had with Region III. Nothing I was told gave me confidence that the problem had been resolved. Up until this time, I had made no formal complaints to NRC, feeling the problem would be solved in-house by Mr. Whittaker.

Later that day, in an un-related matter, in the course of a conversation with Victor Stello, deputy head of ERC's Washington staff, I was asked "How're things going at Midland?" On a personal basis, engineer-to-engineer, I mentioned that I had run into some resistance in my efforts to ensure full compliance with the IAL. While I did not lodge a formal complaint, this is how the Washington Office of the NRC became aware of the problem. I knew Mr. Stello had taken action when I received a call from Mr. James Keppler of the Region III office five minutes after my call to Stello.

Don Miller called me sometime later to tell me that Region III had told him that there would have to be an investigation of the matter since Washington was aware of the problem. At this time, Consumers Power Co. denied the substance and character of my allegations and sent a copy of the denial to NRC.

On July 2, 1981, I wrote to the head of NRC's Region III Office, Mr. James Keppler, informing him that, despite CPC's assurances to the contrary, the issues raised and actions called for in the IAL of May 22, 1981 had not been taken care of by CPC or Bechtel. I was aware of Mr. Cordell Williams' letter which stated that the redlines were now properly supported. I told Mr. Keppler that the calculations referred to in Mr. Williams' letter were not

the required COMMITTED calculations. As a result, I estimated that 50% to 75% of the redlines described in the letter were worthless. I stated that "the hanger loads on record are valueless BECAUSE WE DO NOT KNOW WHERE THEY COME FROM". In the construction of a nuclear facility one does not guess. I further commented that what was once a problem which could have been fixed in five days had now gone on for over a month with no end in sight. I stated that in my professional and expert opinion, "the technical management competence for the Midland Power Plant and their response to your IAL is far less than satisfactory." I encouraged NRC's participation in the matter to make Midland a safe unit.

This letter set in motion an investigation by IRC inspector I. T. Yin.

On July 16 and 17, 1981, Mr. Yin conducted his Midland Project investigation. This was followed up with further inspections on July 23 and 24. At the completion of his first inspection, Mr. Yin held an eight hour meeting with Consumers Power personnel to discuss his confirmation that, indeed, the engineering review of the redlines was deficient.

On July 20, 1981, I met with Inspector Yin and Ron Cook, Jerry Phillips, and Duane Danielson of NRC's Region III staff. We discussed the whole situation, including Bechtel's continued non-compliance with the spirit and letter of the IAL. Inspector Yin reported on his observations and told his superiors and me that he would like to have stopped everything to get all the calculations done originally in lieu of issuing the IAL. I stated that Consumers Power told him that it would cost much more to remedy the problem if a stop order was issued, skilled workers left, and Bechtel had to train an entirely new group of inspectors and engineers. One of the results of the meeting was agreement on the basic statement of a new standard for redlining approval.

The NRC personnel present at this meeting indicated a determination to follow through on CPC's compliance with special care. Bechtel would, in addition, be required to survey large-bore piping and all safety equipment throughout the plant to determine if the same sort of problems had been, (or were now) occurring in those areas.

On August 7, 1981, the results of Inspector Yin's investigation were conveyed in written form to CPC. The letter, from Mr. Keppler, outlined the violations which had been uncovered in field modifications of the redline drawings and required that CPC submit a response. As a result of earlier discussions at the Midland site between CPC and NRC Region III personnel, CPC had already sent two letters to document proposed corrective actions. The letter from Mr. Keppler stated that these proposed actions were being reviewed by NRC staff.

On or about August 21, 1981, I received a letter from Mr. Keppeler. He referred to the inspections that his staff had made. On the basis of their findings, he stated that he considered the matter resolved. He assured me that my allegations had been fully taken into account and that the problem was under control.

On August 28, 1981, I received a letter from Mr. James Cook, Vice President of Consumers Power Company which contained similar statements and indicating that he considered the matter closed. This letter further stated that my services were not required at the Midland project and he requested that I not contact anyone at the nuclear plant site, characterizing my contacts as disruptive and unproductive. He closed the letter with the expected statement that he would investigate any further allegations which I would put into writing.

My participation in the resolution of the problems at the Midland site was made much more difficult following this time. Even though the positions and general comments of NRC's Region III Management stated:

- a. Drawings already issued to the field, which are not supported by CPDC's shall not be used after July 27, 1981.
- b. The procedural control of the design and installation shall be modified to include the methodology presented in this meeting (July 24, 1981, between NRC and CPC) and submitted to the NRC for review by August 3, 1981.
- c. The RE evaluation of stress levels resulting from changes to redline drawings should be supported by a documented description of rationale and/or calculations.
- d. Project approved drawings without appropriate CPDC's were not considered to be engineering approved drawings.
- e. (Emphasis mine, DPS) THE LICENSEE SHOULD INITIATE AN INVESTIGATION TO IDENTIFY WHETHER OR NOT THERE WERE SIMILAR PROBLEMS EXISTING IN OTHER SITE ACTIVITIES.
- f. It has been Region III's experience that extensive delay in incorporating field redline changes into the final drawings has resulted in construction and QC problems at other facilities.

There is no way that these requirements could be met in a brief period of time if they conformed with accepted engineering practices related to the construction of nuclear power facilities. Further correspondence between NRC and CPC followed.

On October 28, 1981, NRC reprimanded CPC for its behavior and violations with regard to the redline drawing procedure. This communication concluded that:

- 1) from March, 1976 through November, 1980, there were no procedures for engineering review of redline drawings;
- 2) engineering procedures for this review were also inadequate at the time of the July inspection; and
- 3) at the time of the inspection, site design engineers were designing piping supports without the required committed preliminary design calculations.

On January 26, 1982, eight months after the noncompliance was first officially noted, and slightly less than three years after the deficiencies first began to occur, CPC admitted that it was in noncompliance with regard to procedures for handling redline drawings and ordered a comprehensive audit of all site design procedures. CPC also noted that this review had turned up two additional difficulties (which they characterized as minor). They stated that all of these problems were in the process of being corrected.

On July 15, 1982, <sup>NRC</sup> issued a report to Consumers Power Company detailing the findings of NRC Inspector I. T. Yin. Specifically:

In discussion with the licensee management personnel, the inspector noted that THERE SHOULD BE A 100% RE-INSPECTION OF ALL THE HANGERS INSTALLED IN 1980 AND A SAMPLE RE-INSPECTION OF HANGERS INSTALLED IN CY 1981 AND 1982. (Emphasis mine, DPS)

On September 8, 1982, it was reported to me that Consumers Power (through its contractors) was proceeding with the installation of new piping systems on two 60 hour per week shifts—even though there remain very serious issues unanswered which relate directly to the safety of the entire installation.

In my professional opinion, it would have been impossible for CPC to have completed the work which Inspector Yin indicated should be done in the NRC July 15, 1982 report prior to September 8, 1982. This means that the safety and cost problems at the Midland Nuclear Plant site are being compounded by poor technical management.

I have been supported by the results of NRC investigations and ultimately by the actions taken by CPC on small bore piping. Item e. of the August 21, 1981 report remains a problem despite the fact that Don Miller told me that it had been accomplished two days after NRC issued the requirement. Several CPC violations of item e. have been issued by NRC to date.

The personal cost to me has been extraordinary. My reputation has been compromised by the actions of Consumers Power Company, Bechtel Engineering, and A.P. Engineering. My ability to earn a living has been damaged. I have had to spend substantial sums of my personal funds to continue to seek to ensure the public safety and vindicate my professional competence.

of this situation is a case study in the procedures in safety-related piping and the role on the part of corporate bodies to admit to when it is brought to their attention.

should be made whole for my participation in this financially and in terms of my reputation. Further, changes are indicated to make the likelihood of action arising again remote. Specifically, the increase its inspectors stationed at nuclear construction sites to twelve to provide complete cover, legislation should be passed extending regulators are covered from 30 days to one year to settlement. Nuclear Power Plant constructors should not only post this information, but carry out semi-annual information campaign among the workers, of their rights and responsibilities in ensuring the public in the construction of a nuclear

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