Sinnissippi Alliance for the Environment
326 North Avon Street
Rockford, Illinois 61103

May 9, 1982

In the Matter of)
) Docket Nos. 50-454 OL
COMMONWEALTH EDISON COMPANY) 50-455 OL
)
Byron Station, Units 1 & 2)

DAARE/SAFE REPLY TO NRC STAFF AND EDISON AND MOTION FOR ADMISSION OF LATE-FILED CONTENTIONS

On April 15, 1982, DAARE/SAFE filed three additional Contentions with the Board. NRC Staff and Commonwealth Edison have filed objections to these. DAARE/SAFE respectfully submits this reply to NRC Staff and Edison arguments that DAARE/SAFE has failed to demonstrate that these Contentions should be admitted at this time, and requests admission of these Contentions as new Contentions.

The Board's September 9, 1981 Scheduling Order provided for the April 16, 1982 filing of "Contentions based on new SSER information". By phone prior to filing, DAARE/SAFE inquired of NRC Staff and Edison counsel the proper interpretation of the Board's Order. At that time Staff attorney Richard Rawson and Edison attorney Alan Bielawski both interpreted it to allow for the filing of "Contentions" based upon new information contained in the "SSER and SER". No distinctions were drawn between "revised" or "new" Contentions, or the "SSER" versus the "SER" as a source document. DAARE/SAFE subsequently filed it's Contentions in the understanding that they were properly filed pursuant to the Board's Order.

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DAARE/SAFE"s Contentions were filed as "Revised Contentions" and numbered 10, 11, and 12, to distinguish them from it's previously filed "Statement of Contentions". DAARE/SAFE intended not to represent these Contentions as "new" or "revised" but to file pursuant to it's interpretation of the Order. However, NRC Staff and Edison response make apparent to DAARE/SAFE the desirability and need for DAARE/SAFE to make clear it's choice of representation for these Contentions. Thus, to the extent that they satisfy the specificity and lateness requrrements of 10 C.F.R. 2.14 DAARE/SAFE requests the Board that it's "Revised Contentions" 10, 11, and 12, be admit- to this proceeding as new Contentions.

The NRC Staff Response enumerated those five factors contained in 10 C.F.R. which must be favorably balanced toward the admission of any individual late-filed Contention. These are:

(i) Good cause, if any, for failure to file on time.

(ii) The availability of other means whereby the petitioner's interest will be protected.

(iii) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.

(iv) The extent to which the petitioner's interest will be represented by existing parties.

(v) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

(i) One good cause for failure to file on time may be the intervenor's inability to do so; another, its acquisition of new information from previously unabailable documents. DAARE/SAFE recognizes that occupational exposure as raised in Contention 10 is not new

to this proceeding. It constitutes a major portion of the "routine" releases DAARE/SAFE Contention 2 will deal with and was similiarly addressed by the Rockford League of Women Voters. DAARE/SAFE did not raise this issue seperately at that time because it had no desire to duplicate the Leagues' efforts on more limited resources. It was also aware it would have the opportunity to speak to the other parties' issues at the hearing stage. This is no longer true. DAARE/SAFE has also acquired new information concerning potential sources of occupational exposure at Byron which forces it to re evaluate upward the relevancy of this issue to this proceeding, and to question futher the adequacy of Edison's dose assessment program. The NRC assessment of occupational exposures recieved as a result of steam generator replacement operations at Turkey Point and the Prairie Island plants occured after the admission of the Leagues' contentions. Most recently the April 1982 issuance of NUREG 0909 assessing the effects of the steam generator tube rupture at the Ginna plant demonstrated that the maximum occupation dose recieved on the day of the event was far in excess of the acceptable dose as represented by the average annual dose from the plant. The April 1982 NRC Steam Generator Report summarized the direct relationship between steam generator maintaince and occupational exposures by stating NRC Staff concerns: "In recent years, as much 25% of some plants annual occupational exposure has resulted from routine S.G. inspection and maintenance and as high as 60% for S.G. replacement." Information provided in the Byron SSER on decontaimination identifies another possible high source of occupational exposure not calculated into Edison's dose assessment program. This is evident from page 12-1 of the SSER which states that there is no present proposal to perform a chemical decontaimination at the

Byron facility, including a determination of the specific chelating agents to be used performed. Thus, Edison's dose assess ment program cannot have accurately calculated routine occupational exposure dosages from such tasks. DAARE/SAFE believes that new information similiar to that presented above indicates the increased frequency of occupational exposure to workers, its severity, and direct relevance to Byron which warrants the admission of Contention 10.

Contention 11 is based upon the unresolved nature of the turbine-generator placement and orientation from that first identified in sections 3.5.3 of the Construction Permit, 3.5.3 of the Byron FSAR, to NRC Staffs recent statement in the SSER that such placement and orientation remains unfavorable. Edison indicates it is performing an additional analysis based upon new information supplied it by Westinghouse. It is DAARE/SAFE's interpretation that until that analysis is completed, Staff recommendations reviewed and changes implemented to change placement and orientation, this issue will remain unresolved. It is DAARE/SAFE's opinion that the present hearing schedule may never allow a more timely opportunity for admission of this contention if it is to be considered in the course of it. Futhermore this Contention, if admitted could be easily met if resolution of the problem is imminent.

DAARE/SAFE's Contention 12 concerns the presence at Byron and possible malfunction of the Haywood-Tyler coolant pumps. Edison has stated it believes these pumps to be present at Byron and to pose a potential safety concern as well as possible Contention. NRC Staff maintains there is no demonstrated connection between "allegedly" defective pumps, their possible presence at Byron, and possible diesel generator failure attributable to them in an emergency power outage. In questioning the length of time DAARE/SAFE has been aware of pump allegations, and supplying a reasonable estimate of it, NRC Staff apparently seeks to imply DAARE/SAFE could have provided a more timely Contention on the Haywood-Tyler pumps.

DAARE/SAFE became aware of allegations as to the unreliability of the pumps and their "possible" presence at Byron just prior to filing it's Supplemental Response to Commonwealth Edison's Request for Additional Information/Contention Four in mid February, when it recieved in the mail a copy of the enclosed article. (Exhibit A) To this date, DAARE/SAFE has been engaged in a fruitless attempt to get verification as to the presence of these pumps at Byron, the nature and status of the NRC investigation of the pumps, and possible action to be undertaken at Byron on this problem. Lacking this information, DAARE/SAFE has lacked substantial grounds upon which to base a Contention, except to maintain that they are possibly defective and possibly present at Byron. Exempting Edison counsel from whom we recieved virtual confirmation just prior to filing Contention 12, of the presence of these pumps at Byron, DAARE/SAFE is still awaiting communication from inquires we addressed to an ACRS member and Edison's Director of Licensing at the ACRS hearing in Rockford, Mr. Jan Strasma, NRC Chicago office, via phone; and NRC Washington office. It is AARE/SAFE's belief that the issue of defective coolant pumps while not directly related to the ECCS, are, "nonetheless, important to the overall safety of the plant in an emergency" (article) and warranted inclusion in the Staff's SSER, which DAARE/SAFE could then cite in support of Contention 12. Like Contention 11, DAARE/SAFE submits this Contention at this time because the brevity of this proceeding schedule may not permit a more opportune moment for it's admission, and as the NRC investigation has been recently pulled back to Washington from its Region IV office DAARE/SAFE is unsure of when it's outcome will affect Byron.

(ii) and (iv) The NRC Staff Response to DAARE/SAFE's Revised Contentions concisely summarizes the favorability of these two factors towards the admission of DAARE/SAFE's Contentions 10, 11, and 12. The second weighs heavily; "This licensing proceeding is clearly the best and possibly the only forum

in which to raise the matters of radiological health and safety allegedly raised in the contentions." The fourth supports as "There appears to be no other party who would necessarily advance and protect whatever specialized interest Intervenor may have with regard to the issues it seeks to raise in this proceeding." In DAARE/SAFE's opinion there is no other proper forum for these issues to be raised, and DAARE/SAFE remains the only party in this proceeding to address these concerns.

(iii) The third factor; the extent to which DAARE/SAFE's participation may reasonably be expected to assist in developing a sound record for Contentions 10, 11, and 12, will be no less complete than it's assistance in completing the record for it's other Contentions. DAARE/SAFE will provide qualified witnesses to testify on each Contention, and will assist in the preparation of testimony.

(v) NRC Staff maintains that the issues raised in Contentions 10, 11, and 12, are different and broader in scope than currently admitted contentions and might possibly delay this proceeding. As DAARE/SAFE stated under Contention 10 in part (i) of this reply, Contention 10 in general does not raise a totally new issue in this proceeding which it was not previously prepared to deal with in the admission of the Leagues' Contentions on radiological concerns and DAARE/SAFE's Contention 2. Contention 12 may be interpreted in broadening this proceeding insofar as it addresses the Haywood-Tyler pumps. It is DAARE/SAFE's opinion that this is more than offset by the relevance of the issue to the Byron plant. The rest of Contention 12 may accurately be said to consist of one of the 18 event patterns enumerated by Dr. Michio Kaku in his deposition by Edison on March 12, 1982 in support of Contention 4. (Pages 125-126) As Edison will already be addressing this event pattern for loss of one generator in an emergency power situation, Contention 12 will not significantly broaden the scope of this proceeding. Contention 11 is the

only contention proffered which may be interpreted as falling outside of previous Contentions.

CONCLUSION

It is DAARE/SAFE's position that for the above reasons cited in the above discussion, DAARE/SAFE's proffered Contentions 10, 11, and 12 satisfy the specificity and lateness requirements of 10 C.F.R. 2.14 whose five factors are favorably balanced toward the admission of these Contentions. DAARE/SAFE respectfully requests the Board to admit these Contentions as issues in the proceeding.

CERTIFICATE OF SERVICE

The undersigned, a member of DAARE/SAFE cetifies that on this date she served a copy of this "Reply and Motion" on each member of the Service List by U.S. Regular Mail, Special Delivery, or by other means as appropriate.

Diane Chavez

Diane Chavez (DAARE/SAFE)

Date: May 10, 1982
cc/Service List

Service List

Alan Bielawski
Isham, Lincoln & Beale
Three First National Plaza
Chicago Il. 60603

Marshall E. Miller, Esq.,
Chairman Admin. Judge
Atomic Safety and Licensing Board
US Nuclear Regulatory Comm.
Washington, D.C. 20555

Mitzi Young
Steven C. Goldberg,
NRC Staff Council, Office of Legal Dir.
US Nuclear Regulatory Comm.
Washington, D.C. 20555

Dr. Richard F. Cole
Administrative Judge
Atomic Safety and Licens-
Board
US Nuclear Regulatory Comm.
Washington, D.C. 20555

Myron Cherry, Esq
Cherry & Flynn
Suite 3700
Three First National Plaza
Chicago, Il. 60602

Dr. A. Dixon Callihan
Administrative Judge
Union Carbide Corporation
P.O. Box Y
Oak Ridge, Tenn 37830

Dr. Bruce von Zellen
Department of Biological Sciences
Northern Illinois University
DeKalb, Il. 61107

Docketing and Service Sect.
Office of the Secretary
U.S. Nuclear Regulatory Comm.
Washington, DC 20555

Mrs. Phillip B. Johnson
1907 Stratford Lane
Rockford, Il. 61107

Region III
US Nuclear Regulatory Comm.
Office of Inspection and Enforcement
799 Roosevelt Rd.
Glen Ellyn, Il. 60137

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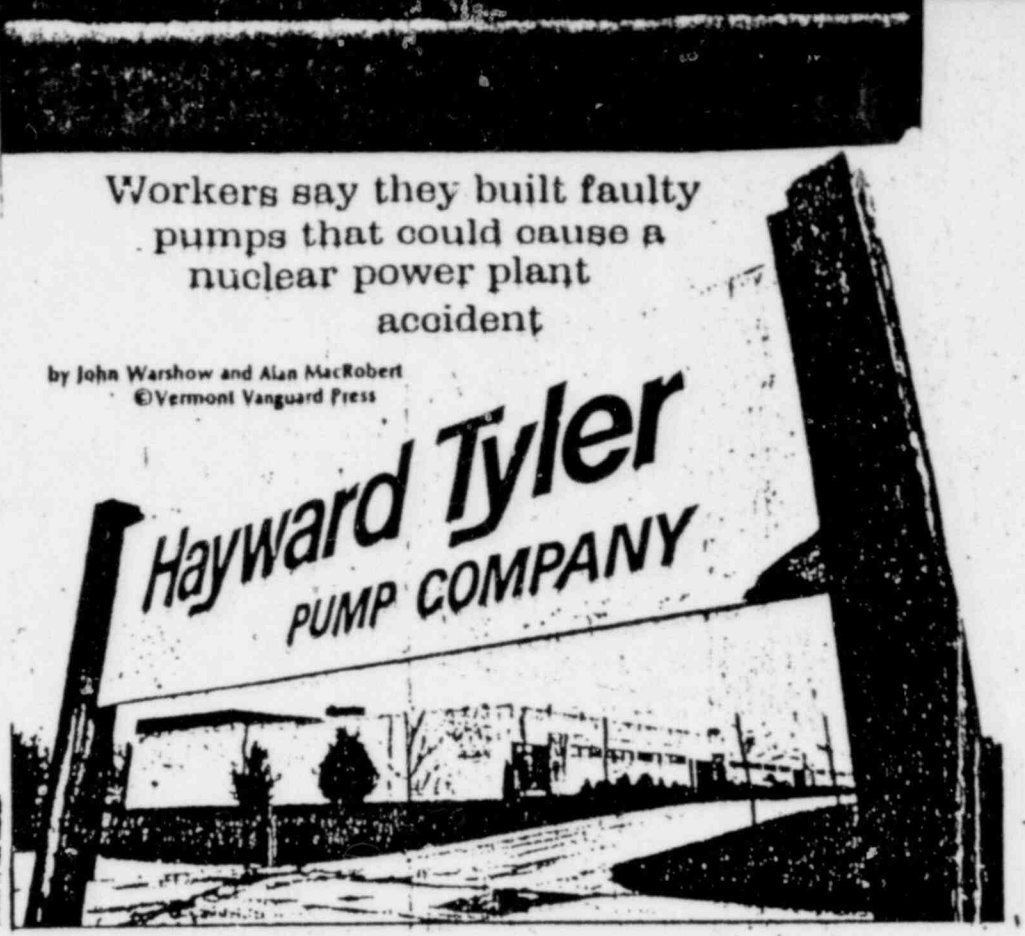
Workers say they built faulty pumps that could cause a nuclear power plant accident

by John Warshow and Alan MacRobert



Company headquarters in Burlington, Vermont.

Pumps critical to the safe emergency cooling of reactor cores in at least twenty-nine nuclear power plants, four of which are in Illinois, may be seriously defective and may fail in use, according to five former employes of the Hayward Tyler Pump Company in Burlington, Vermont.

If such pumps failed during a loss-of-coolant accident, such as occurred at Three Mile Island, a core meltdown could result. Such an accident, according to the Nuclear Regulatory Commission (NRC), could kill tens of thousands of people in a thickly settled area, injure up to a quarter million more, and cause billions of dollars in property damage.

"I personally would never live in the vicinity of a nuclear facility that had Hayward Tyler pumps in any sort of critical capacity," says Alfred J. Thomas, a former methods technician for the manufacturing department at Hayward Tyler. "I have no faith in the product that I was involved with in manufacturing."

Commonwealth Edison, Chicago's electricity utility, has pumps manufactured by Hayward Tyler at four nuclear plants under construction, two at Byron, south of Rockford, and two at Braidwood, south of Joliet. Unlike some of the pumps made by Hayward Tyler, those at Commonwealth Edison's plants are not directly related to the Emergency Core Cooling System, the most critical safety system in a nuclear plant. They are, nonetheless, important to the overall safety of the plant in an emergency and CE officials are taking the allegations of shoddy workmanship seriously.

"We can't afford any slip-ups," said Jim Toscas, nuclear communication specialist with CE. "We have already notified our engineering staff to investigate." Toscas said the pumps in question, two at each of the four nuclear plants, are used to supply cooling water to a diesel engine on a backup electrical power generator. The generator would be used to supply power to the nuclear plant in the case of a major storm or earthquake disrupting the plant's normal electricity supply. "If there were a blackout, this generator would be needed to supply power to the Emergency Core Cooling System," Toscas said, "so in that sense it is related."

Toscas said Commonwealth Edison does not routinely conduct its own quality tests on such equipment but instead takes the word of the supplier company that the part is free of defects. "They're bound by their program to conduct these inspections," he said. "You can't go in and inspect everything yourself." But former employes say taking Hayward Tyler's word about the quality of its pumps could be a fatal mistake.

Alfred Thomas and the four other ex-employes—machinist David DesLauriers, manufacturing secretary Janice Perraudin, former shief welder Fred Lozon, and another ranking ex-employe who wishes to remain anonymous—recently presented affidavits spelling out their charges to the U.S. House Interior Committee's Subcommittee on Oversight and Investigations, chaired by Rep. Edward Markey (D-Massachusetts). All five were employed by Hayward Tyler for between one and three years between 1976 and 1980. Three of the five say they quit voluntarily for reasons of professional ethics. One was laid off, and one was fired.

Their statements to the subcommittee run to 170 typewritten pages, mostly sworn under oath and including some company documents. They allege dozens of instances of faulty manufacture, corner-cutting, ignoring of defects, and violations of the strict record-keeping required for work done on critical nuclear power plant components.

Company officials have denied these charges, and term them "utterly without merit." They say the pumps in question routinely pass inspections by all the parties involved with them. They say they welcome an investigation.

After receiving the affidavits, Congressman Markey's subcommittee on December 11 asked NRC Chairman Nunzio J. Palladino to conduct a full investigation of the workers' charge, one that would include testing and X-raying of a "relevant sample" of pumps that have been received by Hayward Tyler's nuclear customers—mostly nuclear plant construction firms and electric utilities.

Says Congressman Markey, "If these allegations prove correct, I am shocked that the NRC failed to turn up evidence earlier in its previous probes of quality assurance at the plant. If Hayward Tyler Company pumps of major safety significance to nuclear power plants have indeed been sent out with serious quality defects, we need to move swiftly to discover where these pumps are located, to forestall a possible nuclear accident worse than Three Mile Island."

NRC investigators are at the Vermont plant this week.

The Hayward Tyler Pump Company employs 135 people and has sales of $10 million to $12 million a year, according to a 1981 statement by the com-

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to 30 percent of the company's business is nuclear.

Most of the five ex-employes had never discussed their allegations among themselves before John Warshow of the *Vermont Vanguard Press* brought them together during his eleven month investigation for the Vermont alternative newspaper. But their allegations are very similar, and they paint an alarming picture of shoddy manufacturing practices which top management at the plant knew about but failed to correct.

How could Hayward Tyler have passed routine inspections by the Nuclear Regulatory Commission and the American Society of Mechanical Engineers (ASME), and two special investigations by the NRC and one by the FBI?

Fred Lozon, former chief welder for Hayward Tyler, says in his deposition to the Markey subcommittee, "ASME...looks at the paperwork, whether it was signed off right; they look at the date, and whether each job was done in order. They never look at the part....It was the same when the NRC came through. They'd come out and look at the paperwork again but not look at the part.

"...If this is their attitude in auditing and inspecting certain parts, you can come up with any kind of part, you can put anything out there—you could use Mattel parts as far as that goes, plastic toy parts."

In her sworn statement, Janice Perraudin, employed as a secretary to the manufacturing manager at Hayward Tyler from 1978 until January 1980, says that in November 1979 (shortly before she was fired without explanation), she personally altered crucial paperwork on orders from her boss. "One week before the ASME inspection for the 'N-stamp' [nuclear manufacturing authorization] renewal, my work consisted of updating, retyping, and changing documents," she states. "The company's purpose for this was to make all of the manufacturing practices and inspection results previously performed conform to the guidelines of the revised Quality Assurance Manual."

"I got the feeling I was to cover up for all the mistakes out in the shop," she added during an interview.

Janice Perraudin and David DesLauriers: accounts for hasty manufacture, broken regulations, and altered documents.

These various allegations might never have seen the light of day had it not been for the determination of machinist David DesLauriers and his attorney, fellow Vietnam era veteran Tom Bailey. The two met at a local veterans' center. Bailey represented DesLauriers in unemployment hearings when he quit his job in late 1979 in disgust over alleged poor manufacture, after working a year at Hayward Tyler.

In the course of his unemployment hearings, DesLauriers charged that Hayward Tyler was "grossly negligent...in their disregard for product safety." He said that parts for nuclear pumps were being machined without the required approval of inspectors; unfinished pumps were being sent out to utility plants; management was continually overriding in-house inspectors in order to approve use of rejected pump parts; contracted blueprints, parts, and designs were altered without the required approval of the customers; and paperwork was routinely forged or altered to cover up the deficiencies. All these charges have been repeated in the sworn and signed affidavits to Markey's subcommittee.

Bailey then repeated the charges to John Warshow of the *Vermont Vanguard Press*, who conducted an exhaustive investigation that included dozens of interviews and collection of documents from the FBI, NRC, and the Vermont Department of Labor and Industry through the Freedom of Information Act.

No one at Hayward Tyler would respond formally to the allegations despite repeated calls. Later, Larry Clark, manager of corporate communications for Indian Head, Inc.—the New York-based multinational holding company that owns Hayward Tyler, explained that all questions should be directed to him.

When first contacted, Clark said he could not answer questions about Hayward Tyler because he was unfamiliar with the plant and had never been there. He later presented the following statement from the company:

"We believe allegations of poor quality control in the construction of 'N-rated' pumps at Hayward Tyler's Burlington, Vermont plant to be utterly without merit. Any pump or replacement part for any pump that is sold for use in a nuclear facility must pass a variety of inspections—by regulatory third-party inspectors, inspections by the product manufacturer, in this case Hayward Tyler, and by the purchaser. Furthermore, Hayward Tyler has never received a product quality complaint from purchasers of its pumps for installation in nuclear facilities....It is our policy to operate within the spirit and letter of all laws and regulations and to conduct all our businesses with the highest moral and ethical standards. Indian Head believes the practices at Hayward Tyler reflect that mandate."

The most critical of the various nuclear pumps manufactured by Hayward Tyler are those used in pressurized water reactor emergency core cooling systems (ECCS). Flawless operation of these pumps is essential to the functioning of the system in an emergency.

Nuclear fission in a power reactor creates heat. The main reactor coolant system pumps water through the reactor core; the water transfers that heat to the feedwater system where it is used to make steam that drives turbine generators to produce electricity.

A break or significant leak in the reactor coolant system—a loss-of-coolant accident—is the type of accident nuclear plant operators fear most. The pumps in the ECCS must then immediately start flooding the reactor core with thousands of gallons of water a minute to keep the core from overheating. If the ECCS should fail, water might no longer cover the reactor fuel, which would then become white hot and begin to melt, possibly eating through the reactor pressure vessel and the containment building, and releasing billions of curies of lethal radioactivity into the environment.

According to workers who built and handled ECCS pumps, some of those pumps will fail shortly after going into operation under accident conditions.

Before joining Hayward Tyler, Al Thomas served in Vietnam as a helicopter mechanic and crew chief,

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then worked for the Electric Boat division of General Dynamics in Groton, Connecticut, manufacturing parts for the Navy's nuclear submarines. He worked for several months in Hayward Tyler's shop as a machinist before being promoted to become a methods technician in the front office. He declared in his affidavit to Congressman Markey, "Pump castings, impellers, shafts, back covers—any given pump component was at one time or another, in my experience, railroaded through the shop without the benefit of compliance with the Quality Assurance System."

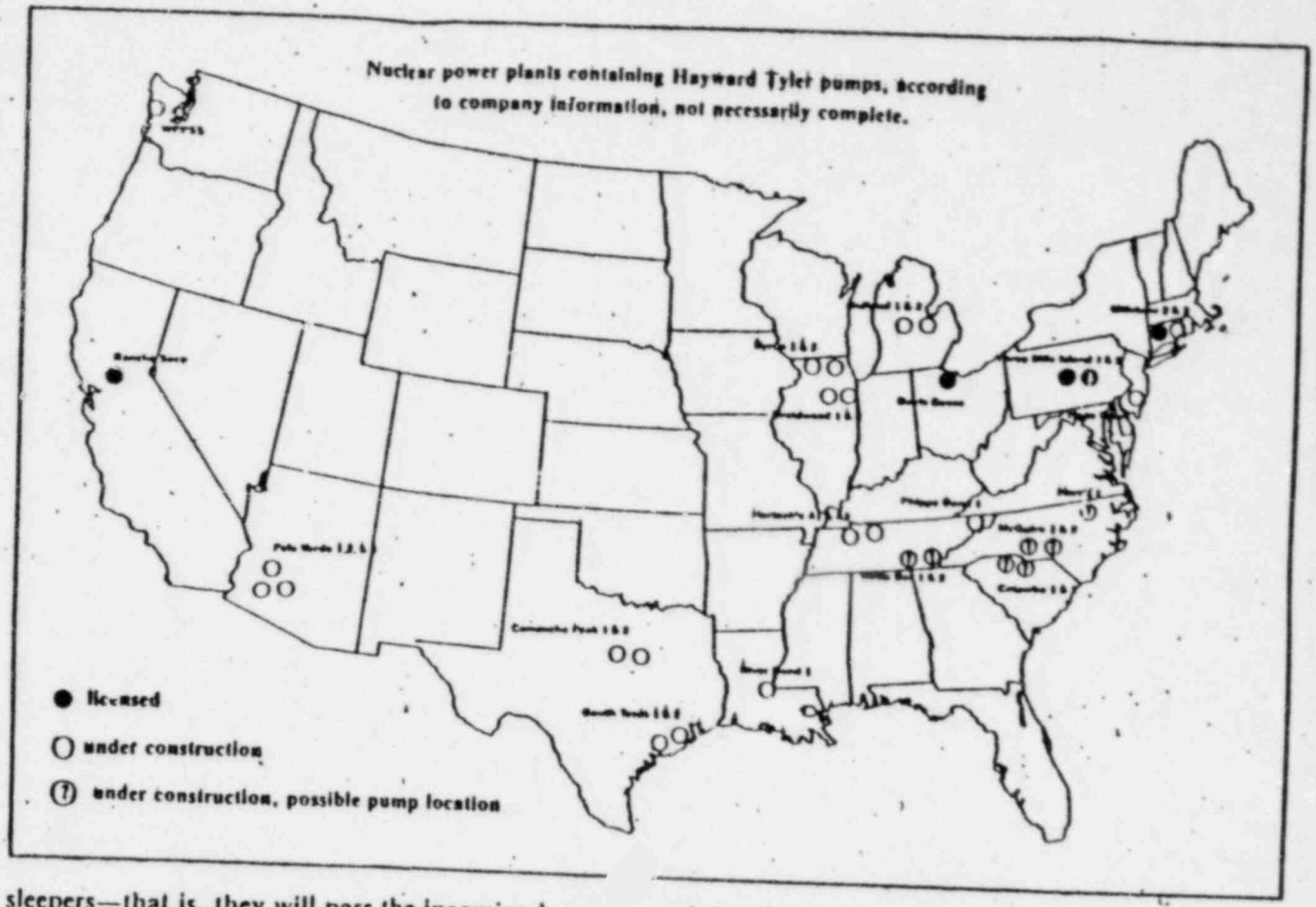
Dave DesLauriers came to Hayward Tyler directly out of the Navy, where he performed "sub-safe-level work in relation to valves and pumps that were used in submarines." He was hired in the fall of 1978 as a horizontal boring mill operator.

"I had on numerous occasions helped the assembly workers assemble some of those pumps that were going out for shipment," DesLauriers wrote to Markey. "I found bearings being put on shafts with sledgehammers, and Crazy Glue being used on pumps....In the navy...when we found cracks and defects in casings, we had them immediately melted down and then we remade the casings....I did not see this happen at Hayward Tyler.

"I know on various occasions pumps went out to different facilities around the country missing some of their key internal parts. One pump went out to a company on the West Coast and did not have its impeller, its bearings, or anything inside. [It] just had the shaft that the impeller would ride on."

If these allegations are accurate, one might wonder why the defects have not been detected by the customers. Robert Pollard, nuclear safety engineer with the Union of Concerned Scientists in Washington, D.C., and a former licensing project manager for the NRC, thinks he may have an answer. Pollard quit the NRC in 1976 after working for the agency for six and a half years because, he says, "I was convinced the NRC was more interested in protecting the industry than the public."

"You have some deficiencies that are potentially sleepers—that is, they will pass the incoming inspection," Pollard says. "You may wind up having a plant in operation with a defective pump whose defect is not going to show up unless there is an accident. These pumps are not required to perform at their design capacity except during an accident."



Pollard adds that NRC inspections of plants under construction are woefully inadequate: "It's entirely a paper inspection. They don't do any inspection of the equipment, and they don't even inspect all the paper. It's a spot inspection of the paper."

How could this all happen? The high-ranking ex-employe who wishes to remain anonymous explains the circumstances in which irregularities at Hayward Tyler became, he says, a matter of routine.

"In the beginning, things went rather smoothly," he wrote to Markey's subcommittee. "I worked long hours but enjoyed them. When we started building nuclear pumps, the trouble began....

"After about two and a half years, we weren't standing up to our production commitments with Stone Platt [then the parent company]. Management was told they would make these commitments or be out on their ears. To make a long story short, the whole place turned into a human time bomb—a complete state of chaos. Men were working an

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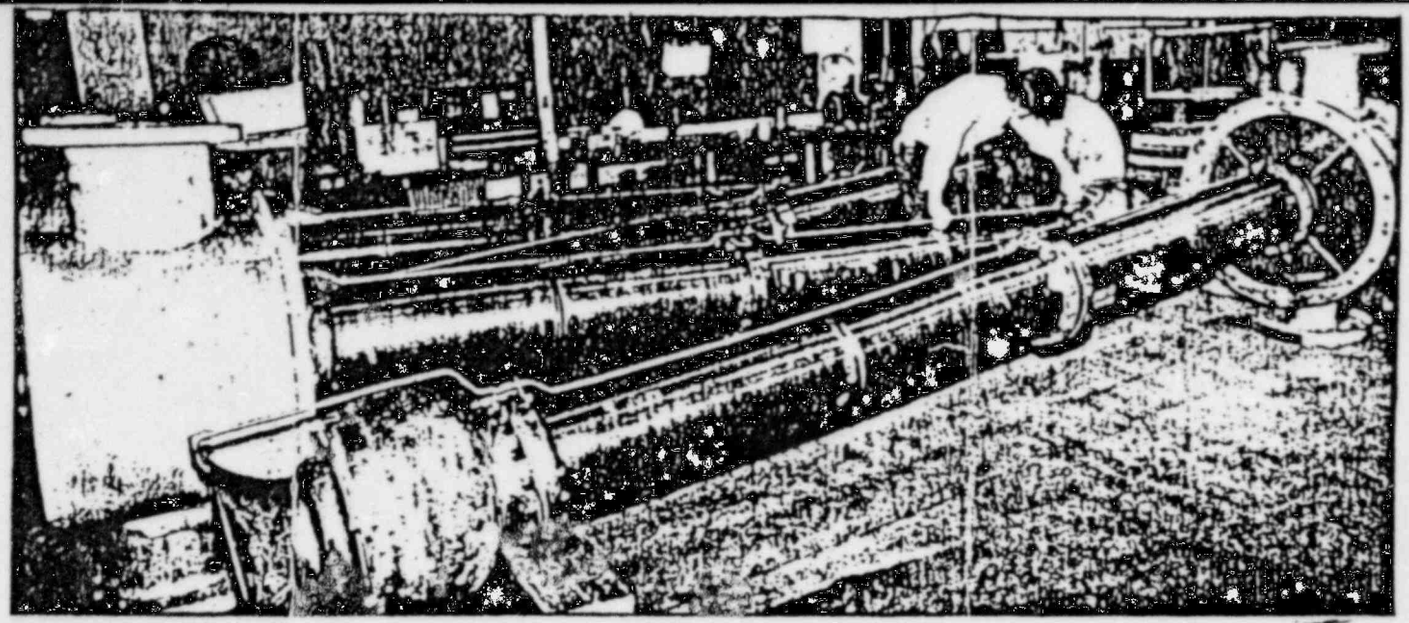

Vertical service water pumps for nuclear power plants under construction in the Hayward Tyler plant.

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unbelievable amount of hours under unheard-of pressure....

"Things started getting worse instead of better. The deadline was getting close. Management ran around like escaped lunatics, but hell or high water, pumps were being shipped. Somewhere, we lost the feeling of becoming the best pump company in the world. Men were tired and manners were few. Everyone was at their wits' end. Still, management insisted on more overtime.

"A pair of shoes should not be built under these conditions....Parts were remachined after inspection; employes were asked to sign off on route sheets who did not perform the operation; men were complaining about a part not being up to standard and were very smoothly convinced by management that the part was okay; when a contract called for a percentage of pumps in that contract to be tested, the ones we were not so sure of were naturally the ones we did not test...."

The ex-employes cite the second shift as the time when irregularities were most commonplace. "The second shift was tacitly acknowledged as the shift that got the work done," says Al Thomas. "One of the reasons behind that was that we didn't have to deal with engineers and the Quality Assurance and Quality Control people. There was a great deal of assembly work done at night."

Thomas claims that during the second shift machine operators were often told to forget the paperwork, forget the Quality Assurance system:

" 'You know what has to be done—I want the base plate (or whatever component) finished when we get it in the morning,' " is the kind of thing Thomas said he heard.

"It's very possible that welding work was done by others than me or the welders working under me," Fred Lozon explains. "There were cases of work we started to do, that weren't finished at the end of the shift. The next day they weren't there—they were completely gone—we had no idea who did them. What they did at night I have no idea."

The unnamed employe says that in his mind, "The biggest thing of all was the impellers [rotors that propel water through the pump]. Some would not fit correctly and didn't run true or concentric. They were knocked around, tightened and loosened until they would run true. There were also the keys for the impellers which did not fit, and were ground by hand till they ran true. If a pump was run to a maximum RPM, they could become loose or out of balance and seize a pump up or shake it to bits. I believe these impellers are supposed to be interchangeable; and if they are, and a change is made in the field not knowing this, it would be a catastrophe."

The big question now is whether the NRC will follow through on the request from Markey's comittee to carry out an intensive investigation of the several hundred pumps in question, including X-raying and dismantling a significant number of them to look for defects.

If the NRC does so, the question will become whether it can be trusted to do a competent job. Robert Pollard of the Union of Concerned Scientists says, "I don't think the NRC has the capability to do it. They're going to have to contract it out to some national laboratory or some other place."

Pollard is also apprehensive on another score: "The NRC has this tendency to...protect themselves....The people who wrote these allegations may become the target of the investigation rather than the company or the pumps."

Congressman Markey shares Pollard's concerns. "The onus should not be on the five former workers at the plant who have spoken out; they should be congratulated," Markey stated before sending his letter to NRC Chairman Pallandino. "The onus should be on the NRC and the Hayward Tyler Pump Company to show that the pumps are indeed safe."