



B2—The Patriot, Harrisburg, Pa., Monday, August 26, 1985

Studies link TMI-related stress, immunity impairments

Associated Press

LOS ANGELES — New studies linking people's moods with their body's disease-fighting ability have found impairment of the immune system among stressed neighbors of the Three Mile Island nuclear power plant and depressed herpes patients.

The findings, presented yesterday at the American Psychological Association's annual meeting, show "stress of different sorts does seem to have an influence on immune function," said Frances Cohen, a University of California at San Francisco psychologist.

One study compared stress and immune system functioning

among Middletown, Pa., residents who live within sight of Three Mile Island in Londonderry Twp., where one nuclear reactor was damaged during a 1979 accident, and residents of Frederick, Md., which is 20 miles from the nearest power plant.

It found the Middletown residents reported feeling considerably more stress and helplessness because of fear of another mishap at TMI, said Marc Schaeffer, a psychologist at the Uniformed Services University of the Health Sciences in Bethesda, Md.

Urine and blood tests showed neighbors of TMI also had increases in stress-related hormones and reductions in various disease-

fighting cells in their immune system, Schaeffer said. They also reported catching colds more often than the Frederick residents, he added.

However, because only 16 people were involved in that part of the study, he cautioned that the results are not definitive.

Another study, of 36 people with herpes, found that those who were more depressed had greater reductions in certain disease-fighting blood cells and more frequent recurrences of genital herpes sores, psychologist Margaret Kemeny said.

While herpes patients might be depressed because of the disease, Kemeny said her findings showed

recurrences of herpes occurred after immune system impairment linked to depression, suggesting depression triggered the sores.

The study found no increase in recurrent herpes outbreaks among people who felt more stress, although herpes patients commonly believe stress prompts their outbreaks.

The results suggest stress and depression can affect the immune system in different ways, said Kemeny, who conducted the study at UCSF before moving to the faculty of the University of California at Los Angeles.

A third study, which involved 40 first-year medical students in Ohio, found impairment of their

immune systems and frequency of illness increased as stress increased just before academic exams.

But Ohio State University psychologist Janice Kiecolt-Glaser also reported that such impairment was not as great among students who said they had a greater sense of control over stressful events.

She said that shows that the influence of mood on the immune system and disease can be moderated by an individual's ability to cope with stress.

In each of the studies, researchers measured stress, depression or other moods using standard psychological questionnaires.

Blood tests were used to measure impairment of various disease-fighting immune cells.

In June, the New England Journal of Medicine published a study showing that a positive mental attitude didn't affect the survival of gravely ill cancer patients. An accompanying editorial proclaimed: "Our belief in disease as a direct reflection of mental state is largely folklore."

The psychologists who participated in yesterday's session disputed that conclusion.

"I don't think anyone here wants to say psychological factors cause disease in and of themselves," said University of Denver psychologist Mark Laudenslager.

A2—The Patriot, Harrisburg, Pa., Friday, Sept. 6, 1985

State finds no TMI-tied cancer rise

By David Morris
Patriot-News

State Health Department officials announced yesterday there is no evidence the 1979 nuclear accident at Three Mile Island caused an increase in cancer cases, but they conceded time could change the assessment.

The findings, contained in a long-awaited study, show the number of cancer cases was about 10 percent higher than statistically expected in the communities closest to the Londonderry Twp. plant, while the number of cancer deaths in both a 10- and 20-mile radius of TMI was lower than expected for similar populations.

The difference in cancer cases is not large enough to be statistically significant, according to the study directed by George K. Tokuhata, director of epidemiology research at the Health Department.

"The essence of the situation is this — we have not found any increase in the incidence of cancer within a 20-mile radius of TMI," Secretary of Health Dr. H. Arnold Muller said at a Capitol news conference.

But "the fact that we have not found an increase does not prove that something may not be in the



Dr. Muller, left; Dr. Tokuhata

Inside:

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- GPU Nuclear Corp. asks federal court to lift restart stay — A2

the accident. "Now the state of Pennsylvania has reaffirmed those impartial scientific studies," he said.

Gov. Dick Thornburgh, who is trying to delay the restart through legal maneuvers, finds the conclusions "comforting," according to spokesman Roland Page.

In a 10-mile radius of the plant, the department identified 2,892 cancer deaths since 1979, while 2,909 would have been expected in any similar population. In a 20-mile radius, 7,924 cancer deaths were recorded while 8,177 statistically would be expected.

The department's study countered a survey by Norman and Marjorie Aamodt, a former Lancaster-area couple who identified a big increase in cancer deaths and said they were linked to the accident. Muller called that report "biased" and said it had no scientific basis.

"Because of the complexity of cancer's origin, one must not draw quick conclusions about cause-and-effect relationships," he said.

He added that "with or without TMI," an increase in cancer deaths should have been expected in the area because:

- The population is increasing
- More cases are being identified because of improved reporting methods.
- Doctors are using new technologies to find cancers that previously went undetected.
- Residents are living longer, and older people are more susceptible to cancer.

York Daily Record • Saturday, September 7, 1985

TMI reviewing respirator rules

Procedures for issuing respirators to Three Mile Island unit 2 employees will be strengthened after plant operator GPU Nuclear Corp. learned that some respirators may have been issued without a current inspection, the company said Friday.

The respirators protect workers from inhaling or swallowing airborne radioactive particles in radiological areas of the unit 2 reactor, which was damaged in the March 1979 accident.

Under TMI procedures, the respirators are to be inspected once a month as a precaution for cleanliness and wear and are marked with a sticker showing that the inspection was done.

In August, it was learned that some respirators may have gone for more than a month without an inspection.

A review by GPU Nuclear indicated that 17 such respirators had been used during the month. The longest that any may have exceeded the monthly inspection date was 20 days.

Inspections of more than half of the 17 respirators show them to be in good condition. All indications are that the respirators functioned properly and that there were no worker exposures.

GPU Nuclear is continuing to inspect the remaining respirators and is making a precautionary check of the workers involved for internal deposition of radioactive materials, a spokesman said.

A2—The Patriot, Harrisburg, Pa., Friday, Sept. 6, 1985

TMI foes skeptical of cancer findings

By Jerry Dubs
Patriot-News

Opponents of Three Mile Island aren't buying the state Department of Health's conclusion that the 1979 accident at the nuclear plant did not cause any cancer problems in the area.

"They've misinterpreted the data in an attempt to hoodwink the public," Marjorie Aamodt said of the report released yesterday.

Aamodt and her husband, formerly of the Lancaster area, are authors of a study that concluded there was a sevenfold increase in cancer deaths in some areas around the Londonderry Twp. nuclear plant after the accident.

The state report concluded that the Aamodts' study was "biased" and "contrary to scientific findings." Dr. H. Arnold Muller, secretary of the Health Department, said the Aamodts' study was "not valid."

However, Aamodt said the information in her study was verified by the TMI Public Health Fund in January. The fund has commissioned researchers from Columbia University for a \$242,033 study of health issues and TMI.

While the Health Department report did not lay to rest questions about cancer and TMI, it did confirm suspicions held by some nuclear activists.

"From the calls that have come in, a lot of people say they do not trust the state reports and studies," said Kay Pickering of TMI Alert.

She said the numbers from the cancer registry used by the Health Department to determine there were only a dozen more cancer cases in the area than would have been expected may have been in-

complete.

"Many individuals feel that they are not listed on the registry. Doctors have told them that they would not list them and others have gone out of state for treatment," she said.

Pickering was not alone in her skepticism.

"I really don't have much faith in the findings. Figures can be manipulated," said Mary Osborn, who joined with four other women to picket Gov. Dick Thornburgh's residence last month in an effort to get the Health Department study released.

"One doctor we talked to had 11 leukemia patients in the area; [the report] shows only two," Osborn said.

Joyce Corradi, who also picketed the Governor's Mansion, said she was glad the report finally was released, but she questioned whether the information used to reach conclusions in the study was accurate.

"I was told that I don't live in the five-mile radius [of the plant], I know I'm in the five-mile radius," she said. "I don't trust Dr. Tokuhata, period."

Dr. George K. Tokuhata, director of the Health Department's Division of Epidemiology, directed the study.

The report, which state officials said would be ready in June, was delayed because it was being rewritten in layman's terms and because the conclusions were being verified by other experts, officials said.

"I think that many of us don't believe that's the reason it took so long. I believe a lot went on behind the scenes. This has international significance. It has a lot of ramifications for court cases," Pickering said.

GPU asks U.S. court to lift stay on restart

By Mick Rood
Washington Bureau

WASHINGTON — GPU Nuclear Corp. asked a federal court yesterday to lift a stay on the company's restart of the Three Mile Island Unit 1 reactor.

Containing the Nuclear Regulatory Commission had "properly ordered" renewed operation on May 29, the utility told the court that customers and shareholders of the parent General Public Utilities Corp. are bearing "enormous cost" while the plant is shut.

GPU Nuclear spokesman Doug Bedell said customers are losing \$80 million a year in rate savings attributable to Unit 1 operations and common stockholders are losing another \$60 million in earnings.

A 3rd U.S. Circuit Court of Appeals panel ruled 2-1 last month that the NRC on May 29 had correctly ordered restart of the Londonderry Twp. nuclear plant.

But just minutes before GPU Nuclear was to receive the go-ahead from the NRC to start the plant Aug. 29, Judge Collins said GPU Seitz continued the stay on restart to give intervenors two weeks to

appeal the panel's decision to the full nine-judge court.

In the first of those appeals, Three Mile Island Alert will tell the court today that the panel misconstrued the legal issues in question, TMI attorney Lynne Bernabei said yesterday.

The Union of Concerned Scientists and Norman and Marjorie Aamodt, formerly of the Lancaster area, are expected to file appeals next week. Roland Page, a spokesman for Gov. Dick Thornburgh, said the state, which also is a party to the restart case, had not decided yet whether to file an appeal.

The intervenors contend that more safety hearings are needed before restart.

TMI claims the many restart conditions the NRC would put on GPU Nuclear — if it is allowed to start up Unit 1 for the first time in 6 1/2 years — are amendments to its operating license. TMI again will point out hearings were not held on the 1979-79 identification of water leak rates at TMI Unit 2, even though the NRC has agreed concerns raised by the leak tests are material to GPU Nuclear's fitness to hold a license. Bernabei said.

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offing later on," he added, noting that most cancers take more than five years to develop.

The study, which was released the same day that operators of the nuclear plant asked a federal appeals court to dissolve a stay and allow restart of the undamaged Unit 1 reactor, was criticized by foes of TMI.

According to the report, 133 new cancer cases were identified in Fairview and Newberry townships and York Haven and Goldsboro — the four closest communities downwind of the crippled Unit 2 reactor — between July 1982 and June 1984.

The study showed that 121.4 new cancer cases could be expected in any population that size. The increase of about 12 cases is nearly 10 percent, but Muller said the new cases cannot be linked to the accident.

"While Newberry Twp. appeared to have 10 more cases than might have been expected, virtually all of the discrepancy — nine of the 10 — involved non-radiogenic cancers or those not generally associated with radiation," Muller said.

He called the report "the first scientific analysis of cancer among those living within a 20-mile radius of the plant."

Doug Bedell, spokesman for GPU Nuclear, operator of the plant, said the company has relied on impartial scientific studies that showed no ill effects resulted from

The Patriot, Harrisburg, Pa., Thursday, Sept. 5, 1985

GPU pledges 'continued' candor

Washington Bureau

WASHINGTON — GPU Nuclear Corp. acted to reaffirm yesterday what it called a "long-standing commitment to open and candid communications" with the Nuclear Regulatory Commission and the public.

The company released a letter on its policy from GPU Nuclear President Philip R. Clark to the NRC after a congressman released training course material in which 17 engineers from GPU Nuclear's Oyster Creek nuclear plant were coached in November 1983 on ways to "get by" NRC inspectors.

The consulting firm running the two-day seminar, General Physics Corp. of Columbia, Md., said it has since eliminated the objectionable material from the course on "containment system leakage testing."

Employees from the other GPU

Nuclear-run nuclear plant, Three Mile Island Unit 1 in Londonderry Twp., were not involved.

GPU Nuclear is especially sensitive to potential improprieties involving the NRC regulation, since the company that preceded it in operating TMI Unit 1 was convicted of falsifying leak rate tests at TMI Unit 2 in February 1984.

In addition, intervenors in the TMI Unit 1 restart case have accused GPU Nuclear officials of withholding information from the NRC in several instances, but NRC investigators say they have found no intentional or improper conduct by the utility.

Clark told the NRC that GPU Nuclear corporate policy directs employees to:

- ... continue to provide full and accurate information in a timely manner on GPUN activities and operations.

Electrical fire leaves TMI-1 inoperable

From staff and wire reports

The owners of Three Mile Island will investigate the cause of an electrical fire Saturday morning that left Unit 1 inoperable for at least the next few days, according to reports.

The smoldering fire was discovered at 3:58 a.m. Saturday, and damaged electrical switches used to operate nuclear reactor control rods, according to Doug Bedell, a spokesman for the plant's operator, GPU Nuclear Corp.

Bedell said plant operators used an extinguisher to put out the fire after they were alerted by an

alarm. He said no injuries were suffered during the fire, which presented no hazard to workers.

The reactor itself was not damaged, and an emergency was not declared. Bedell said workers were at the plant yesterday to devise a plan to investigate the fire. He said company officials hoped to begin searching for the cause today.

Unit 1 was not damaged during the March 1979 nuclear accident at Three Mile Island's Unit 2 reactor. Although the Nuclear Regulatory Commission has authorized restart, the unit remains shut

down pending the outcome of appeals filed in the 3rd U.S. Circuit Court of Appeals in Philadelphia.

Bedell said the fire started in switches located in the plant's relay room, below the control room. The switches are part of an electrical system for control-rod drive mechanisms — devices that regulate the movement of control rods inside the plant's nuclear reactor.

At the time of the fire, Bedell said, the plant was on "hot standby," meaning Unit 1 was heated to operating temperatures, but the reactor itself was not running.

As part of de-energizing the

electrical switches after the fire, plant operators inserted into the reactor core four groups of control rods that were in a withdrawn position, Bedell said. There are eight groups of control rods, all of which are now inserted, he said.

"If the reactor had been running, it would have shut down during the fire," Bedell said. It would have remained shut down until the cause of the fire was located and corrected, he added.

Bedell said he didn't know how long repairs would take, but said he didn't think they would be costly.

State, N-protesters seek restart hearings

By David Morris and Mick Rood
Patriot-News

Lawyers for the Commonwealth and an anti-nuclear group yesterday asked the full 3rd U.S. Circuit Court of Appeals to order the Nuclear Regulatory Commission to hold hearings before allowing the restart of Three Mile Island's Unit 1 reactor.

The latest appeals stem from an Aug. 27 decision by a three-judge panel, which ruled 2-1 that the NRC's restart order on May 29 was proper. The court two days later granted an emergency stay to give intervenors time to appeal the ruling to the full court.

"Before TMI-1 restarts, the citizens of the Commonwealth must have adequate assurance that the licensee's management can safely operate the plant," said the brief filed on behalf of Gov. Dick Thornburgh.

"After six years of investigation, it is impossible to explain why the NRC has not held hearings on two key issues of managerial capability of the TMI-1 operator," the brief notes. "These issues can not be dismissed by merely asserting that the present management of TMI-1 is different, that the issues are not significant public safety issues, or that the Commission can proceed as it chooses be-

cause this in an enforcement proceeding. The facts do not support these assertions."

The Union of Concerned Scientists, in its appeal, contended the 155 restart conditions the NRC imposed on TMI operator, GPU Nuclear Corp., constitute amendments of its operating license. Federal law requires public hearings on nuclear plant license amendments, the group said.

At issue are whether the NRC should hold hearings to determine if any current Unit 1 manager or operator was responsible for "the intentional and systematic falsification" of leak-rate tests for Unit 2 or was involved in withholding information about the March 1979 accident that crippled the reactor.

The NRC determined that additional hearings were not necessary. The court's "great deference" to the NRC is unwarranted, state lawyers claimed in their filing.

The lawyers wrote: "Public confidence in the safety of nuclear power production may be severely damaged, even more than by the TMI accident itself, if the outstanding issues of management competence and integrity are not resolved openly and on the basis of evidence in the record. The case of Three Mile Island... is a fundamental test of the nuclear regulatory process."

UCS lawyer Elyn R. Weiss argued that the NRC decision, if left to stand, "would allow federal agencies to hold the due process rights of those whom they regulate and those whose lives and property are affected by their action hostage to the semantic circumlocution of creative drafters."

It is not clear when the court will address points raised in the briefs. But Douglas Bedell, spokesman for GPU Nuclear, which last week asked the court to lift its stay on restart, said each day restart is delayed is costly to the utility's customers and stockholders.

For every week that the undamaged reactor remains idle, he said, GPU customers have to pay an extra \$1.5 million for replacement power and other costs, while investors lose about \$1 million in potential earnings.

NRC says it won't probe fire

Investigation slated by GPU Nuclear

By Frank Lynch
Patriot-News

The U.S. Nuclear Regulatory Commission says it will not conduct an independent investigation into a fire Saturday at Three Mile Island Unit 1 that damaged an electrical panel that drives rods controlling the nuclear chain reaction.

"It doesn't happen every day," said Karl Abraham, public affairs officer for NRC Region 1, which includes Pennsylvania. "But they are not all that uncommon."

Abraham said the fire, which occurred at 3:58 a.m. Saturday, will be investigated by GPU Nuclear Corp., the company that operates TMI. The NRC inspection staff on the island "will follow up" that investigation, Abraham said.

Plant spokesman Douglas Bedell said repairs to damaged components began yesterday, and that the series of switches and the control rods they operate would be operational "in the next couple of days."

He said the reactor was not damaged and there was no emergency declaration. "It [the fire] is not expected to have any effect on our restart schedule," he said.

Restart of the unit, undamaged in the March 1979 accident at its Unit 2 sister reactor, was put on hold two weeks ago by the 3rd U.S. Circuit Court until appeals filed against restart are considered by the full court.

Saturday's fire affected the drive mechanisms for two control rods in the Unit 1 reactor, Bedell said. Control rods are made of a metal alloy that, when placed in the reactor, act as a "neutron poison." The rods shut down fusion — the nuclear chain reaction.

At the time of the incident, four of the eight sets of control rods had been withdrawn from the reactor. Bedell said those rods, the "safety group," are normally in that position. He said control room operators tripped the reactor, causing those four to drop into the reactor. All eight sets of control rods were in the reactor yesterday morning, he said.

The NRC staff, which has also been investigating unit 2 leak rate allegations, has received the report from Stier. Stier has also made available to the NRC staff testimony he developed during the investigation.

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TMI torches 23 'pot' plants

Associated Press

Officials at the Three Mile Island nuclear plant had to deal yesterday with a different kind of plant. Security guards burned 23 marijuana plants spotted last week in woods at the south end of the island.

TMI security officials watched the plants since last Tuesday, when they were discovered, until Saturday. No one attempted to retrieve them during the surveillance, TMI spokesman Douglas Bedell said.

Although both gates to the island are guarded, the woods are not within the fenced perimeter of the nuclear station and they can be reached by the public by boat or by wading across the river, Bedell said.

"We simply don't know how they got there," he said. "To the extent we can do more investigating, we will."

Bedell said TMI has a strict policy that anyone caught bringing drugs into the plant will be fired. He said a contractor's employee in 1980 and two temporary clerical employees last year were fired for possessing marijuana.

Work finished on switches at TMI Unit 1

Repairs have been completed to electrical switches damaged in a smoldering fire Saturday at the Three Mile Island Unit 1 nuclear reactor in Londonderry Twp.

A spokesman for GPU Nuclear Corp. said the repairs were finished Wednesday.

Testing showed the fire was caused by a faulty electrical relay switch in a system that regulates the control rods in the plant's relay room, below the control room.

Saturday's fire was extinguished by plant personnel using a fire extinguisher.

The Unit 1 reactor remains in hot standby condition, meaning it is heated to operating temperature but not running. The switches operate control rods used to regulate nuclear reactions under normal plant operation.

Unit 1 was not damaged in the 1979 accident that damaged its twin reactor. The Nuclear Regulatory Commission has granted GPU permission to restart Unit 1, but the reactor has remained idle pending appeals of the restart order to the U.S. 3rd Circuit Court in Philadelphia.

cleanup at TMI-2.

That money, already being collected in the company's base-rate charges, had been earmarked toward paying off the investment in TMI-2.

Cohen also issued a recommendation yesterday in the rate-hike request of Met-Ed's sister company, Pennsylvania Electric Co.

Penelac is seeking a \$55.3 million increase, but Cohen is recommending a \$4.2 million rise.

Met-Ed and Penelac are subsidiaries of General Public Utilities Corp. of Parsippany, N.J.

Met-Ed serves 380,000 customers in 14 eastern and central counties, while Penelac serves 537,700 customers in 31 northern, western and central counties.

Probe: TMI-2 leak tests often altered

By MICHAEL ARGENTO
Daily Record staff writer

Operators at Three Mile Island's unit 2 reactor frequently manipulated tests to determine leakage from the reactor's coolant system and routinely discarded test results that didn't conform with federal standards.

But it turned out the tests were defective and the actual leakage rarely exceeded standards set by the Nuclear Regulatory Commission.

Those are among the conclusions of a report issued Tuesday that resulted from an independent investigation of allegations of falsification of leak tests at unit 2.

The investigation was commissioned by TMI operator GPU Nuclear Corp.

The falsification and discarding of test results occurred between March 1978, when unit 2 began operating, until the March 1979 accident. The tests did not contribute to the accident.

"It is clear that this practice was carried over from TMI-1 where it had been established in September 1974," the report said.

At unit 1, which was undamaged in the March 1979 accident at unit 2, the investigation showed operators failed to document and discarded a small percentage of the leak test results.

Stier's report confirms the re-

Pa. wants more restart hearings

Attorneys for Gov. Dick Thornburgh asked a federal appeals court Tuesday to order the Nuclear Regulatory Commission to hold more hearings before Three Mile Island's undamaged unit 1 reactor can resume operation.

Furthermore, operators at unit 1 made additional efforts to measure leakage.

But at unit 2, operators discarded the tests about 50 percent of the time, the report said. And they did not conduct further evaluations to determine actual leakage.

Operators at unit 2 saw the test as an "administrative requirement" and did not use the test to measure actual leakage, the report said.

The falsification of tests led to criminal charges against former plant operator Metropolitan Edison Co.

A federal grand jury indicted Met-Ed in 1983 on charges of

falsifying data from the leak rate tests conducted before the unit 2 accident.

In early 1984, the company pleaded guilty to one charge in the indictment and no contest to the others.

It marked the first time a utility had been convicted on criminal charges.

Following the indictment and guilty plea, GPU Nuclear commissioned Edwin H. Stier, a Newark, N.J., attorney and former director of the New Jersey Division of Criminal Justice, to conduct an independent investigation.

GPU Nuclear paid nearly \$2 million for the investigation, said company spokeswoman Lisa Robinson.

Stier's 15-month investigation began in July 1984 and involved extensive technical analyses of more than 200 tests and interviews of more than 60 people.

"This has been a major investigation," said Philip R. Clark, president and chief executive officer of GPU Nuclear. "Completing it and making the findings public fulfill the company's commitment that the facts would be fully developed and made known."

Please see TMI on 8A

Operators discarded test results that showed leakage that exceeded federal standards about 50 percent of the time.

Stier's investigation also developed more detailed information about the leak rate tests, including:

Actual leakage infrequently exceeded limits. The detailed technical analysis of records showed that periods during which actual leakage was above federal stan-

dards infrequent and of limited duration.

The inaccuracy of the test was not reported to management so corrective action could be taken. That is a requirement of the NRC and the company's own policies, but was not done.

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Met-Ed deserves \$19.9 million rate boost, PUC judge says

By George Weigel
Patriot-News

Metropolitan Edison Co. is entitled to \$19.9 million of a requested \$47.3 million annual rate increase, a state Public Utility Commission administrative law judge says.

Judge Herbert S. Cohen's recommendation, issued yesterday, includes disallowing a requested \$9 million in depreciation expenses for the undamaged Unit 1 nuclear reactor at Three Mile Island.

That ruling sided with arguments of the PUC staff and the state Office of Consumer Advocate, both of which claimed that Met-Ed should not be able to recover depreciation expenses while the unit is out of service.

Cohen's recommendation also includes a cut of \$7.4 million from Met-Ed's request for about \$15 million more a year to operate and maintain two coal-fired generating stations.

PUC officials said they could not immediately determine what effect Cohen's decision would have on an average customer's rates.

Under Met-Ed's original request, an average customer using 500 kilowatt-hours of electricity a month would see his monthly bill rise from \$45.81 to \$51.69 — an increase of nearly 13 percent.

Cohen's recommendations would allow Met-Ed about 42 percent of the amount it seeks.

If that same percentage decrease is applied to an average monthly bill, an aver-

age customer would face a boost of about \$2.47 a month — or about 5 percent.

However, those figures are unofficial and may vary depending on how Cohen's adjustments affect different classes of customers.

Met-Ed filed for the rate increase in January, claiming the extra revenue was needed to meet increasing operating expenses and to improve the efficiency of its Titus and Portland coal-fired generating stations.

Another \$9 million of the request involved the plan to claim depreciation expenses for TMI-1.

The recommendation now goes to the PUC for consideration and a final vote.

The commission tentatively plans to discuss the case at its Oct. 3 and 10 meet-

ings and to take action Oct. 24.

The current rate case excludes costs associated with TMI-1, which has been idle since the March 1979 accident at TMI-2.

The return of TMI-1 automatically would trigger rate adjustments that already have been approved.

TMI-1 would increase base rates by \$29.7 million but decrease Met-Ed's energy cost rates by \$80.4 million. That dual adjustment would result in a net reduction of \$50.7 million.

In a related ruling that will have no effect on customer's rates, Cohen also yesterday recommended approval of Met-Ed's request for an accounting move that would transfer an extra \$8.3 million to the

NRC member says TMI-1 restart is disappointing

By Michael Sullivan
Patriot-News

MILLERSVILLE — Nuclear Regulatory Commission member James Asselstine last night called the federal court decision that clears the way for restart of the Unit 1 reactor at Three Mile Island a disappointment.

Asselstine, the only member of the NRC to vote against the restart of Unit 1 on May 29, spoke to about 100 Millersville University students and members of Susquehanna Valley Alliance, an anti-restart citizens' group.

His talk came several hours after the U.S. 3rd Circuit Court of Appeals in Philadelphia had refused to hear an appeal of the

restart decision filed by the state and citizens' groups, who contended that more safety hearings are needed.

"Obviously I am disappointed," Asselstine said. "I had hoped the full panel would take a look at the case to determine if more hearings were needed on safety issues."

He called the NRC authorization to restart the nuclear power plant unit "the single biggest failure of the agency."

Asselstine was given a hero's welcome by restart opponents in the audience, who presented him with flowers and a basket of fruit.

Kay Pickering, spokeswoman for the alliance, said the 10-2 vote by the full circuit court was an

ever before."

She said alliance volunteers continue to receive phone calls from area residents opposing restart.

The anti-restart group plans several local activities in a show of opposition. Among them are canvassing to ask residents to call Gov. Dick Thornburgh's office and that is acceptable to the people who live around the plant."

The review by the NRC failed to address key issues involving management competence and integrity, Asselstine said.

Opponents of a Unit 1 restart, including Gov. Thornburgh, testified before the NRC on management integrity issues. But their statements were made during a meeting, not a hearing, Asselstine said.

"I think the commissioners listened to what was said, but that kind of opportunity doesn't substitute for a hearing," he said.

Asselstine said a majority of the commissioners view GPU Nuclear Corp., operators of TMI, as a "whole new organization" and that management integrity is not an issue in the restart.

If the Supreme Court does not block restart, Asselstine said his role will be to "assure for my part that it is done safely."

especially harsh blow to restart opponents. She said the group's top priority now will be to ask the U.S. Supreme Court for an extension of a stay that blocked restart pending the appeals.

"The support hasn't dwindled," Pickering said. "In fact, as an organization we have raised more money in the past year than ask that the state appeal the restart decision to the Supreme Court.

The group also will hold a demonstration vigil Wednesday at 3:30 p.m. on Route 441, just north of the Three Mile Island gates in Londonderry Twp. The vigil is planned 30 minutes before the court order that blocked restart is to be lifted.

Asselstine, in his hourlong talk, said the NRC's inability to address serious issues has resulted in an erosion of public trust in both the commission and the nuclear industry.

"Tonight may not be the best night for anyone from the NRC to be in this area," he said. "The NRC has viewed the public as the enemy. There is real resentment and hostility toward public involvement in its decision-making."

He called the NRC's handling of the TMI restart case "really a tragedy. It needs to achieve a solution to the problem — a solution

TMI-hearing denial casts fate of restart into Supreme Court

By Mick Rood
Washington Bureau

WASHINGTON — The full U.S. Circuit Court of Appeals yesterday denied opponents of the Three Mile Island Unit 1 restart a rehearing and said that unless the U.S. Supreme Court acts on expected appeals, the plant could start up at 4 p.m. Wednesday.

A three-judge panel of the circuit court had ruled in a 2-1 decision on Aug. 27 that further safety hearings sought by Pennsylvania and anti-nuclear groups were unnecessary. By refusing a rehearing, the full court in Philadelphia affirmed that decision, leaving the U.S. Supreme Court as the last legal recourse in the case.

Three Mile Island Alert, a TMI-

From Page A1

ing out various restart requirements.

The NRC came within minutes of issuing the letter Aug. 29 when the circuit court continued a stay on restart so the appeals denied yesterday could be filed.

TMI Unit 1 has not operated since February 1979, when it was shut down for refueling and maintenance. By order of the NRC, the plant remained shut down for improvements after the TMI Unit 2 nuclear accident in March 1979.

area citizens' group, plans to appeal to the high court, attorney Joanne Doroshow said yesterday afternoon. The state is expected to do the same, but a spokesman for the governor said only that state attorneys are reviewing the case.

"We're disappointed, but we will go to the Supreme Court and hope the governor will too. This is not over yet," Doroshow said.

The U.S. Supreme Court associate justice assigned to hear 3rd Circuit Court appeals is William J. Brennan, a member of the liberal wing of the court who may be sympathetic to the issues of citizens' redress raised in the TMI proceedings.

But attorneys for the intervenors, which also include the Union of Concerned Scientists and 79 water leak-rate falsifications at Unit 2. Public hearings are required when operating license amendments are involved, opponents have said.

The NRC and GPU Nuclear contend that the NRC properly relied on its own investigations and other "extra record" information to reach conclusions on the leak-rate manipulation and other issues without holding hearings.

Citing the lengthy TMI restart proceedings, in which many other management safety issues were examined at length during public hearings, the three-judge circuit court panel said the NRC had been within its discretion to order restart last May 29.

Norman and Marjorie Aasmot of Coatesville, Pa., were not speculating on their chances.

Spokesmen for GPU Nuclear Corp. said the Londonderry Twp. nuclear power plant will remain in "hot standby" status until Wednesday afternoon, when, barring Supreme Court intervention, GPU will begin a "deliberate, gradual power ascension" process.

"We are pleased with the decision and the court's prompt action," a GPU spokesman said.

Nuclear Regulatory Commission spokesman Joseph Fouchard said the commission also is "pleased with the court's action" and is ready to issue a letter next Wednesday to GPU Nuclear spell-

See RESTART — Page A2

The Patriot, Harrisburg, Pa., Wednesday, Sept. 25, 1985

Justice orders stay extension on TMI restart

By Mick Rood
Washington Bureau

WASHINGTON — U.S. Supreme Court Justice William J. Brennan Jr. yesterday extended until at least Friday a stay on restart of the undamaged Unit 1 reactor at Three Mile Island.

Brennan asked for comments by noon Friday from GPU Nuclear Corp., operator of TMI, and the Nuclear Regulatory Commission, which ordered restart May 29.

GPU Nuclear had stood ready to begin a gradual, three-month start-up process of Unit 1 beginning at 4 p.m. today when the stay granted by the 3rd U.S. Circuit of Appeals would have expired. The NRC had prepared detailed restart conditions for the Londonderry Twp. plant.

Final judgment on the 6½-year-old case could take weeks or months, Brennan's options include:

— Dismissing the only restart appeal in the Unit 1 case, filed yesterday by anti-nuclear group Three Mile Island Alert, and allow renewed operation.

— Ruling on his own that the stay should continue until the full court decides whether to hear an appeal on the merits of the case.

— Referring further review of the case to the full court.

Brennan is assigned to hear appeals of decisions by the circuit court, which refused last Thursday by a 10-2 vote to review the NRC restart order. A three-judge panel had ruled 2-1 on Aug. 27 that the NRC's order was proper. Judge Arlin M. Adams dissented.

Brennan yesterday ruled within five hours of TMI's appeal. Before the ruling, TMI's attorney, Joanne Doroshow, acknowledged the appeal might have been her last filing in behalf of the citizens' group.

"There have been no decisions in our favor. It's a long shot," she said of the legal struggle that began when the NRC kept Unit 1 shut down after the Unit 2 accident in March 1979 at TMI.

As of last night, TMI was the only one of four intervenors to file an appeal.

From Page A1

Adams' dissent. TMI has argued that some of the more than 155 conditions the NRC has placed on the TMI-Unit 1 operating license actually are license amendments that require a public hearing under the Atomic Energy Act.

Adams said both GPU Nuclear and the NRC staff had at one time referred to the restart conditions as amendments to a license the commission had formally suspended in August 1979.

"The purpose of [the Atomic Energy Act] is to provide a public hearing upon request whenever the scope of a nuclear reactor's authority is altered by granting, suspending, revoking, or amending of any license," Adams argued.

TMI, as had the state and



William J. Brennan Jr.
In charge of appeals

Inside:

- Browns Ferry plant won't produce power until April '86 — A14
- Louisiana nuclear plant goes into operation — A14

The commonwealth of Pennsylvania had planned a TMI-related announcement yesterday, but Gov. Dick Thornburgh canceled so state attorneys could study Brennan's action.

The Union of Concerned Scientists had not decided by last night whether it would file a costly appeal to the nation's highest court.

Norman and Marjorie Aasmot, formerly of Coatesville, Pa., who have recently moved to New York, were expected to appeal. Their attorney, Alan Kanner of Philadelphia, was not available for comment.

In its petition to the Supreme Court, TMI leaned heavily on

See RESTART — Page A14

UCS in prior appeals, concentrated on the need for hearings on systematic falsification of coolant leak-rate reports to the NRC in 1978-79 by Metropolitan Edison Co. personnel. Met-Ed was convicted of criminal misconduct for the offenses, and individuals still are being investigated by the NRC.

The NRC has contended that Met-Ed's successor, GPU Nuclear, has changed safety procedures and agreed to bar from Unit 1 sensitive positions the employees implicated in the Unit 2 leak-rate rigging. The commission based its clean bill of health on investigations by the NRC Office of Investigations and on statements made by former U.S. Attorney David Dart Queen, who absolved some remaining utility executives of involvement in leak-rate falsification.

Stay against restart to be lifted

The Patriot, Harrisburg, Pa., Tuesday, Sept. 24, 1985

TMI foes ask governor's help

United Press International

A group of women opposed to the restart of Three Mile Island's undamaged nuclear reactor picketed the Capitol yesterday, then marched to Gov. Dick Thornburgh's office to make an 11th-hour plea for help.

"We're counting on the governor. We've got all our eggs in his basket," Paula Kinney told Thornburgh's press secretary David Runkel, who met the group in the governor's reception room.

"Whatever it takes, he owes it to us . . . not to let that plant start till all the issues have been resolved," said Kinney of Middletown. TMI is located in nearby Londonderry Twp.

Thornburgh's office said no decision had been made whether to appeal to the Supreme Court a ruling last week by the 3rd U.S. Circuit Court of Appeals, which ordered that a stay against the restart of TMI's Unit 1 reactor be

lifted at 4 p.m. tomorrow.

The reactor has not been operated since its twin was crippled in March 1979 in a partial meltdown, the nation's worst commercial nuclear power accident. No other U.S. nuclear reactor has ever been down so long, then restarted.

"We're looking at the decision and the earlier opinions," said Roland Page, the governor's spokesman on TMI.

A spokesman for the Nuclear Regulatory Commission said "if there's nothing to stop us," the authorization to restart Unit 1 would be issued tomorrow afternoon by the NRC's Office of Nuclear Reactor Regulation in Bethesda, Md.

TMI Alert, an anti-nuclear group, said it will file an appeal with the Supreme Court, probably today. The organization also said it would demonstrate at TMI tomorrow afternoon, with some demonstrators prepared to be arrested. About 80 protesters have been arrested since the NRC approved the

Unit 1 restart in May.

Ten members of the Concerned Mothers and Women group picketed in front of the Capitol for about an hour before going to Thornburgh's office. They carried small American flags and signs, one of them reading, "If TMI opens democracy dies."

"This is the 11th hour and something must be done," said Joyce Corradi, who lives about three miles from the reactor.

"I have five children. I don't want them being raised in the community I've lived in all my life, next to a nuclear power plant run by a company that's been indicted for wrongdoing," she said.

Restart foes contend the NRC should hold hearings on the involvement by employees of General Public Utilities Nuclear Corp., the plant's operator, in the falsification of test records at TMI prior to the 1979 accident.

Billion dollar cleanup puts life into Three Mile Island

By Frank Lynch
Patriot-News

The accident at the Three Mile Island nuclear generating facility on the Susquehanna River put both reactors in mothballs for six years.

But viewed from any angle — technical, public relations, legal or regulatory — all is not quiet at TMI.

Workers at the plant's Unit 2, the reactor that overheated and melted nuclear fuel in March 1979, are in the midst of a billion-dollar, technically challenging clean-up effort that will last at least through 1988.

And the fate of Unit 1, which was down for refueling at the time of the accident at its sister reactor, on Friday was in the hands of the U.S. Supreme Court.

As the court considers whether more hearings are needed before restart, company spokesmen say the plant is in a "hot standby" status and could reach full power within months.

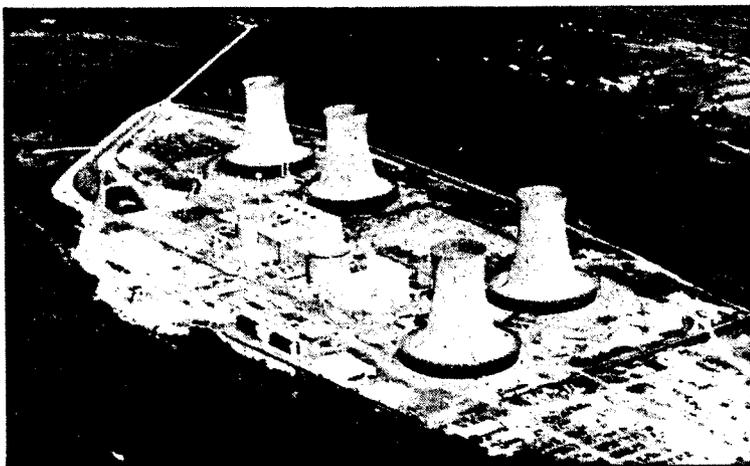
Meanwhile, General Public Utilities Corp., the owner of TMI, has mounted an extensive, expensive public relations campaign to convince Central Pennsylvanians that TMI can generate electricity "safely and reliably."

On another front, GPU lawyers are facing a massive number of personal injury lawsuits — at least 1,400 at this writing — filed in Dauphin County Court by area people claiming they or relatives were injured by radiation releases from the accident.

Those suits follow an announcement in February of a \$4 million settlement GPU reached with the families of 70 children who had filed accident-related suits. Altogether, the utility's insurers have paid about \$40 million in damage claims.

As the suits proceed through court, the state Department of Health this month released a long-awaited study that concludes that no increase in cancer cases can be attributed to the accident at Unit 2.

Regarding Unit 1, spokesmen



All is not quiet at TMI as cleanup continues pending an OK to restart

say the plant is ready to operate.

In April, workers plugged 233 tubes in the plant's steam generators, which convert water to steam that runs the turbines that produce electricity. The utility has plugged about 1,500 of the 31,000 tubes in both generators, and spokesmen said that number of plugged tubes would not affect efficiency or safety of plant operation.

GPU Nuclear, plant operator, has spent more than \$51 million repairing the generators since many were found to be corroded in November 1981.

TMI spokesman this year have said the only thing needed to run the plant was approval by the Nuclear Regulatory Commission.

That was obtained on May 29. On that day the NRC, after hearing the equivalent of 100,000 pages of testimony over several years, and after delaying a restart decision on several occasions, voted 4-to-1 to lift shutdown orders it imposed on

Unit 1 the summer after the accident.

Unit 1 was down for scheduled refueling at the time of the accident at its sister reactor.

Days after the NRC restart decision, however, attorneys for the commonwealth and anti-nuclear groups asked the 3rd U.S. Circuit Court in Philadelphia to stay the restart of the plant until safety and management integrity issues are resolved.

A three-judge panel lifted the NRC order in June, but four weeks ago announced that no further hearings on safety or management integrity issues were needed for restart.

Two weeks ago, the full circuit court upheld that decision, paving the way for the Supreme Court motion.

Concerning Unit 2, here are some of the milestones in the last year:

— In May cleanup workers removed the 55-ton, 12-foot-high

plenum from atop the reactor. Removal of the plenum, which houses a reactor's control rod guide tubes, was the last major hurdle to be cleared before workers can remove melted fuel and damaged components inside the reactor.

Plant operator GPU Nuclear estimates that defueling should begin next month.

— The plenum lift followed an announcement by GPU Nuclear that remote television pictures of

the bottom of the reactor showed that some fuel melted during the accident.

At the bottom of the reactor, technicians found a mound of rubble — melted fuel and pieces of reactor equipment — estimated to weigh 30 tons. Based on what was found in the reactor, government and company experts conclude that temperatures inside the reactor reached about 5,100 degrees Fahrenheit during the accident.

GPU people said the video pictures give them a better idea of

what they will be dealing with when defueling operations begin.

— Last month 3,000 gallons of low-level radioactive water spilled on to the floor of the containment building, which houses the reactor, during a procedure to test a new filtering device. TMI spokesmen have said the spill will not delay cleanup.

— In the cleanup procedure, which GPU estimates will last through 1988, about \$600 million of the \$1 billion cost has been spent.

Isotope level up at TMI GPU: Device used faultily

By Christopher Quinn
Patriot-News

Levels of radioactive strontium at Three Mile Island Unit 2 have been twice as high as previously thought because an instrument used to measure the isotope was incorrectly calibrated in 1981, according to TMI operator GPU Nuclear Corp.

But company officials yesterday said adjusted readings for the isotope, Strontium 90, still are well below maximum federal allowances.

GPU Nuclear said a beta spectrometer used to measure Strontium 90 was incorrectly calibrated in 1981 because directions for calibration were unclear and misinterpreted.

The incorrect readings were registered only for solid chunks and particles of the substance, which is produced in nuclear fission. Strontium 90 normally is contained in fuel rods during reactions, but it was released into the Unit 2

See RADIOACTIVE—Page A2

Power fails in TMI test

By Frank Lynch
Patriot-News

An electrical breaker failed and "smoked" during testing of the control rod drive system at Three Mile Island Unit 1 this week, accounting for the second electrical failure in the system this month, officials said.

A smoldering fire, described by plant officials as an "electrical arc," occurred about 1:30 p.m. Monday. The fire was caused by a "mechanical failure" in the breaker and was extinguished quickly by a plant operator, said TMI spokesman Lisa Robinson.

No emergency was declared, and the unit again is functional, she said.

On Sept. 7, a relay switch system that sends power to two of the reactor's eight control rods also shorted out and smoldered. A spokesman said at the time that failure caused no emergency at the plant, and the affected switch was replaced in several days.

Robinson said company officials didn't report Monday's accident publicly because it

See TEST—Page A2

Radioactive

From Page A1

reactor during the 1979 accident at the plant.

Doug Bedell, a GPU Nuclear spokesman, said Strontium 90 is dangerous when ingested, and the highest intake by anyone at the plant was only 11 percent of the maximum federal level.

Bedell said in all other cases of Strontium 90 ingestion, the amount of the isotope taken in by plant workers was be-

low 3 percent of the federal limit.

GPU Nuclear's use of a beta spectrometer to measure radioactivity in Strontium 90 is unique in the nuclear industry. Most nuclear plants use laboratory methods to measure the substance, but those methods take about 14 days to complete. The spectrometer provides almost instant readings, GPU Nuclear said.

Immediate readings are needed at the plant because the

1979 accident released low levels of the isotope in the plant.

The spectrometer's error has resulted in the misclassification of at least one delivery of low-level nuclear waste to the Hanford Waste Management Facility in Richland, Wash.

GPU Nuclear has notified the Hanford facility, the Nuclear Regulatory Commission and state officials of the situation, which was discovered by a TMI chemistry technician.

Test

From Page A1

was "minor" and "didn't impact on the system at all."

A replacement breaker was installed "in a couple of hours," she said. "We are still ready to restart when we need to be."

The fate of Unit 1, which has been shut down since the March 1979 accident at Unit 2, is now in the hands of the U.S. Supreme Court. An anti-nuclear group, Three Mile Island Alert, has appealed to the court to prevent restart until more safety and management integrity issues are held. No decision

is expected until at least tomorrow afternoon, and probably not until next week.

Robinson said the incident is not unusual, and is "typical of individual component failures that occur from time to time at nuclear power plants."

Ann Overton, a spokeswoman for the Nuclear Regulatory Commission Region 1, which includes Pennsylvania, said the incident was "minor," and "this would not have been a problem for a plant under normal operating conditions."

The unit is designed to interrupt electrical power — when necessary — to the reac-

tor's control rods, allowing them to drop into the reactor to stop the nuclear chain reaction.

If the system had failed during operation, an identical back-up system would have maintained power to the rods. She said the NRC requires that a new breaker be installed immediately and that the back-up breaker be tested within eight hours.

If the plant needed to be shut down during the failure, Robinson said the back-up system is designed to do that. If both would have failed, operators can interrupt power to the rods manually to stop the reaction.

The Patriot, Harrisburg, Pa., Sunday, Sept. 29, 1985

High court keeps TMI closed as state argues against restart

By Mick Road
Washington Bureau

WASHINGTON — Three Mile Island's Unit 1 remains shut down under a U.S. Supreme Court order today while Justice William J. Brennan Jr. considers an appeal to keep it that way.

The commonwealth of Pennsylvania became the last of the interested parties in the case to file comments yesterday before a noon deadline. Earlier, TMI operator GPU Nuclear Corp. and the federal government filed arguments in favor of restarting the Londonderry Twp., Pa., nuclear power plant.

Brennan set yesterday's deadline after Three Mile Island Alert on Tuesday appealed a 3rd U.S. Circuit Court of Appeals decision

Inside:

● Unit 1 cleanup on schedule; length of time on fuel removal unknown — B3

upholding the Nuclear Regulatory Commission's order allowing the plant to be started.

TMI asked that the court maintain an order blocking the restart until deciding whether or not to hear the appeal.

Brennan or the full court could decide within a few days to dismiss the appeal, but if the court agrees instead to consider the case, and continues the stay of the restart order, it could take months for a decision.

The federal government argued yesterday that the court cannot keep blocking the restart simply "because it is a controversial nuclear power plant."

Acting Solicitor General Charles Fried said a TMI accident isn't "remotely likely" during the period in which the high court might want to consider hearing the case.

Arguing for the NRC, which ordered Unit 1 restarted on May 29, Fried said:

"[TMI] is, in effect, asking the court to stay the operation of TMI-1 because it is a controversial nuclear power plant."

"It is especially improbable that the commission's expert judg-

See TMI—Page A5

ed from 1974-1978 without incident."

Commonwealth attorneys reiterated their argument that the NRC ordered restart without holding legally required public hearings on:

— Whether utility management was involved in leak rate falsification at TMI-2 in 1978-79.

— Whether utility management withheld TMI Unit 2 accident information from the NRC in 1979.

GPU Nuclear Corp. has denied management involvement in either instance.

Unit 1 was shut down for refueling at the time its sister Unit 2 was severely damaged March 28, 1979, in the nation's worst commercial nuclear accident.

Associated Press

Cleanup of Three Mile Island's damaged nuclear reactor has proceeded on time but TMI officials said yesterday that it's difficult to predict how long it will take to remove fuel from the plant.

Frank Standerfer, director of Unit 2, said removal of the fuel is scheduled to begin the last week of October, but the length of time it will take is still not certain.

"Uncertainty remains regarding details of the defueling opera-

tions, particularly their estimated durations, because of their first-of-a-kind nature," Standerfer said.

The Unit 2 reactor was damaged in March 1979 during the worst-ever accident at a U.S. commercial nuclear power plant.

Standerfer said a recent review of cleanup procedures at the Londonderry Twp. facility "has increased our confidence that planned activities will accomplish a safe defueling of the reactor while maintaining the plant in a stable and safe condition."

The fuel should be removed by the middle of 1987, with the total \$965 million cleanup to be finished by September 1988, according to TMI officials.

"It's possible that we could find things that could take us longer to defuel the reactor," said TMI spokesman Gordon Tomh. "There are a lot of the uncertainties because it has never been done before."

GPU Nuclear Corp., TMI's operator, said it has spent \$561 million on the cleanup as of June 30.

The Patriot, Harrisburg, Pa., Friday, Sept. 27, 1985

GPU Nuclear hits TMI Alert's 'procedural complaints' delay

By Mick Road
Washington Bureau

WASHINGTON — GPU Nuclear Corp. has told the U.S. Supreme Court an anti-nuclear group's "procedural complaints" do not justify further delay of restarting Three Mile Island Unit 1.

Associate Justice William J. Brennan Jr. had asked on Tuesday that by noon today, other parties to the TMI case file responses to Three Mile Island Alert's petition to stay the restart pending a review by the high court.

It was unclear whether Brennan will act immediately on the responses this afternoon, refer the matter to the full court or lift the stay in either case. Three other TMI

restart intervenors, including the state of Pennsylvania, are expected to file comments this morning.

The Nuclear Regulatory Commission approved the Unit 1 restart on May 29, and the 3rd U.S. Circuit of Appeals in Philadelphia has affirmed the order.

TMI's appeal is the last legal challenge in the way of restart of the undamaged Unit 1, which has been kept shut down since the accident at Unit 2 in March 1979.

In the first comment on TMI's petition, plant operator GPU Nuclear's attorneys said the group had to justify a continued stay and court review by showing the NRC had "abused its discretion" in denying further safety hearings on TMI Unit 1.

The company argued the NRC had not abused its discretion. Rather, the NRC had made clear to parties in the case that conditions it placed on the Unit 1 license did not require public hearings in every instance.

TMI has argued some of the conditions were really license amendments requiring public hearings. GPU Nuclear called the argument "a purely semantic distinction that should be disregarded."

GPU Nuclear also told Brennan that irreparable injury must be shown to legally justify a further stay on the Unit 1 restart. TMI, just by contending there was a remote possibility of an accident, couldn't demonstrate injury, the utility said.

The Patriot, Harrisburg, Pa., Saturday, Sept. 28, 1985—B3

TMI defueling still unsettled

State's TMI study clouded by survey method doubts

By Frank Lynch
Sunday Patriot-News

The state's recently released study of health effects of the 1979 Three Mile Island accident may have been flawed by expanding the survey areas beyond the prescribed five- and 10-mile zones.

According to 1980 census figures, the state Department of Health included 28,610 people who live farther than five miles from the Londonderry Twp. plant in the population listed for those who live within five miles.

Another 122,000 people who live farther than 10 miles from the plant were included in the population of those living "within" 10 miles.

THE RESULT, according to epidemiologists and statisticians contacted by the Sunday Patriot-News, is that if there actually were adverse health effects such as increased cancer cases among those living close to the plant, the figures would be diluted by expanding the base population.

"It seems like a strange thing to do," said Dr. Robert A. Hultquist, Pennsylvania State University professor of statistics. "I think you would substantially dilute (assumed cancer rates) to get even a few miles away."

Dr. George Hutchinson, Harvard professor of epidemiology, concurred.

"Let's suppose there is an ex-

From Page A1

"within" the 10-mile zone actually live farther away.

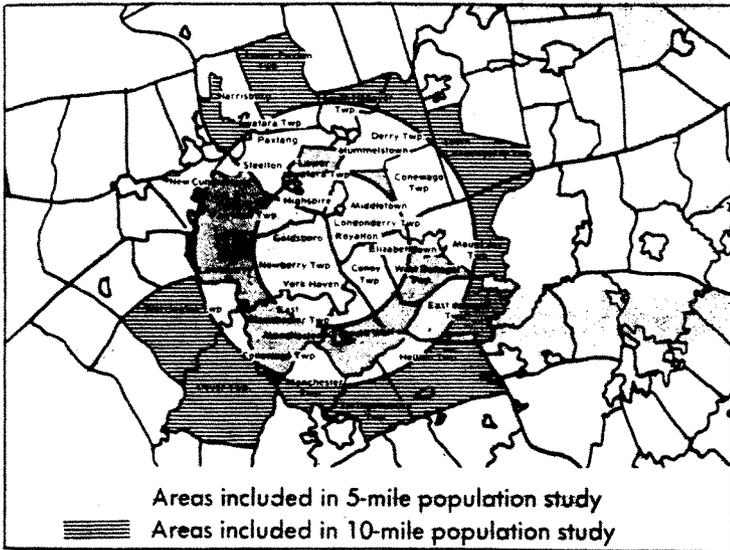
For example, all of Lower Paxton Twp.'s 34,830 residents were included in the 10-mile figures, although only 2,000 of them live in the silver of the township inside the 10-mile radius. Some Lower Paxton Twp. residents live as far as 16 miles from the plant.

Health Department officials defend the way they gathered their data. They say the data were not diluted by the excess population included, and that the study could not have been conducted had they attempted to stay close to the imaginary 5- and 10-mile zones.

"IT WOULD be a tremendous job, almost humanly impossible" to conduct such a study, said Edward Digon, principal author of the report and chief of the department's special studies section, division of epidemiology research.

Digon said the report should have noted that some of the people included in the study live outside the zones. Such a notation had been included in an early draft that he wrote, but was deleted during the editing process. Leaving the explanation out, he said, was an "error."

But Digon stressed that there was not an increase in cancer. He said the four communities entirely



Areas included in 5-mile population study
Areas included in 10-mile population study

ness cancer rate (in the five-mile zone), and not excess rate beyond the five-mile zone," he said. "The larger population would dilute the overall cancer rate."

THE STUDY, released a month

ago, concluded that no adverse health effects had been found so far in people who live around TMI, site of the nation's worst commercial nuclear accident on March 28, 1979.

Comparing census figures with Digon noted that death certificates and cancer incidence information from the state's Cancer Registry are available according to "minor civil division" — or by township and borough.

Since the minor civil divisions do not align with the five- and 10-mile circles, officials included all of a division in the study even if only part of it is within the described zone.

Digon said it was decided to use the divisions — even though their use inflates the population numbers — because it will be easier to conduct follow-up studies.

"YOU COULD do it (try to divide the divisions to stay close to the zone circles). But you can't do that for too many years because the reference books (needed to keep track of residents) would fill up a room," he said.

Therefore, he said future comparison studies also will include those living outside the zones.

Harvard's Hutchinson said that to do a study expeditiously, "there is a good argument for using townships and boroughs rather than using areas defining a circle around Three Mile Island."

But he said that that study method should have been described in the report. "If there is not any footnote (explaining that some areas are actually not within the described zones), then you have a problem."

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the totals listed by the Health Department. 44 percent of the population figured in the five-mile statistics live outside that zone, while 42 percent of those said to be

See STATE 5—Page A10

1,300 have claimed TMI-related injuries

A suit filed yesterday in Dauphin County Court brings to least 1,300 the number of people claiming they or relatives were injured by the March 1979 accident at Three Mile Island. The suits, which contain the names of more than 400 people, allege that radiation released during the accident caused injuries. The suits, which have been filed in court since February, say the accident caused physical, emotional, distress and exposed them to radiation that increased their risk of cancer and other serious illnesses.

Defendants named are General Public Utilities Corp., owner of the plant; its subsidiaries Metropolitan Edison Co., Jersey Central Power and Light and Pennsylvania Electric Co.; plant designer Babcock and Wilcox Co.; its parent company J. Ray McDermott & Co.; engineer Burns & Roe Inc.; and Catalyst Inc., subcontractor at TMI.

GPU and government officials have said that not enough radiation escaped during the accident to harm anyone. Plaintiffs, their current addresses and injuries as described in yesterday's suits are: Mary Gallagher and David Gallagher of Phoenix, Pa. She has sustained a complete hysterectomy, urinary tract infections and kidney infections. She has had a hysterectomy, urinary tract infections, and an underlying thyroid condition. She has had a hysterectomy, urinary tract infections, and an underlying thyroid condition. She has had a hysterectomy, urinary tract infections, and an underlying thyroid condition.

Sister R. Bernhardt and Joseph M. Bernhardt of Erie, Pa. She has sustained a hysterectomy, urinary tract infections, and an underlying thyroid condition. She has had a hysterectomy, urinary tract infections, and an underlying thyroid condition. She has had a hysterectomy, urinary tract infections, and an underlying thyroid condition.

The Evening News, Harrisburg, Pa., Thursday, Oct. 3, 1985

Permission to restart disappoints officials

By Christopher Quinn and Tony Perry
Patriot-News

"The die has been cast. There's nothing left to do... I feel the battle has been lost." Those were the words yesterday of Arthur Morris, mayor of Lancaster, concerning a U.S. Supreme Court decision allowing Three Mile Island Unit 1 to restart. Plant operator GPU Nuclear planned to have the Londonderry Twp. facility on line by soon today, chairman of the citizen's Advisory Panel for the Decontamination of TMI Unit 2. "I remain unhappy because I feel that more hearings should have been held."

Morris and many other central Pennsylvanians sought in a federal lawsuit to force the Nuclear Regulatory Commission to hold more hearings on the issue.

"I can't see anything else happening," Morris said.

State Sen. John Shumaker, R-Grantville, said his current court action against TMI might be the last hope. Shumaker leads a group of elected state officials in a lawsuit unrelated to yesterday's decision. His suit seeks to lift the Unit 1 operating license.

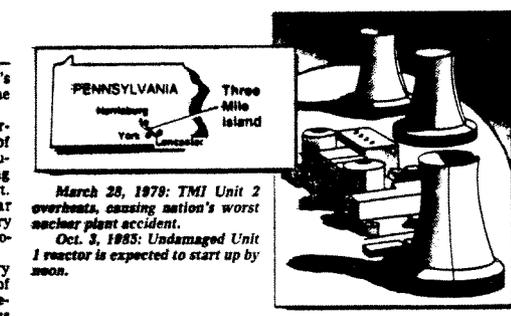
Of yesterday's decision, Shumaker said, "Of course I'm disappointed. There are just so many unanswered questions in people's minds."

He said his lawsuit might be the last stand in opposing restart.

"This may be it. The citizens here have made their voices known over the past several years. I don't think the mere fact that a decision has been made is going to change people's thoughts. It's not going to make them feel more secure."

Eric Epstein, spokesman for the anti-nuclear group TMI Alert, rested his hopes on Shumaker's suit, which currently is before the 3rd U.S. Circuit Court of Appeals in Philadelphia.

"Our attorneys have been working on the appeal for weeks in case the Supreme Court should lift the stay," he said.



March 28, 1979: TMI Unit 2 overheated, causing nation's worst nuclear plant accident.

Oct. 3, 1985: Undamaged Unit 1 reactor is expected to start up by noon.



Arthur Morris

"I'm not happy"

Epstein also called on Gov. Dick Thornburgh to take action. "The governor has got to intervene," he said. "He can declare that TMI is an eminent disaster. The most timely thing he could do would be an executive action."

Thornburgh revealed no plan to intervene yesterday. He called on area residents to respect the decision of "the highest court in the land," and said he had assurances from the NRC and GPU Nuclear that restart would be safe.

"Thanks in great part to the efforts of the commonwealth,



Sen. John Shumaker

"Unanswered questions"

steps have been taken to make Three Mile Island safer today than at any time since the accident at the companion Unit 2 more than six years ago," Thornburgh said.

A spokeswoman for a pro-TMI group, Pro Women, criticized TMI for fighting restart. She said the group's leaders were not serving area residents.

The spokeswoman, Ruth Merchant, said her group was excited by yesterday's Supreme Court decision, adding, "We feel this should be the end of this saga."

TMI remains drawing card
It appears that public interest in Three Mile Island has not waned over the years. "We get a number of calls from people in the area wanting to visit TMI," said Carolyn O'Keefe of the Greater Harrisburg Area Chamber of Commerce. "Many times people will call us and ask what bridge they can go over to see TMI."

William R. Gross, manager of the TMI Visitors Center, reported that 394,000 people have gone through the center's exhibits in the last six years.

Gross said another 36,408 people have taken on-site, in-plant tours and 19,230 have viewed the plant by bus.

The report covers the period from July 7, 1979 (when the visitor center reopened) through Aug. 31. The center was closed after the March 28, 1979 accident because the land around it was converted into a "trailer city" to house reactor personnel.

The center is located across from the nuclear plant on Route 441 in Londonderry Twp. It is open from 10 a.m. to 5 p.m. daily except Thanksgiving, Christmas and New Year's Day.

The bus tours were introduced three years ago, Gross said. The tours last 45 minutes to an hour and reservations are suggested. Information call 968-8642.

From start-up to full power expected to take 3 months

If Three Mile Island's Unit 1 reactor begins operating as planned today, it will be at least three months before it reaches full power.

When it finally does, the 800-megawatt plant should supply power to more than half a million homes, eventually cutting \$58 million a year off electric bills.

Plant operator GPU Nuclear Corp. has kept Unit 1 in a heat-up stage through most of the past few months. There are no nuclear reactions during heat-up, but the plant's systems are tested under operating temperature and pressure.

GPU officials list the following steps in the full start-up of Unit 1.

— The first steps in the restart began at 4:28 a.m. today when six groups of control rods (there are eight groups altogether) were lifted from the reactor's core. Workers then began to deborate the water in the reactor at 5:50 a.m. The rods and the boron inhibit the movement of neutrons that cause nuclear reactions.

— Once the rods are lifted and the boron content reduced, fast-moving neutrons will start striking and splitting uranium atoms, producing intense heat and freeing even more neutrons to strike more atoms. The ensuing chain reaction is expected to begin between 2 and 3 p.m.

— Water pumped through the reactor will pick up heat from the splitting atoms. Under pressure,

the water reaches a temperature near 600 degrees before being pumped to steam generators to transfer heat to a second water supply.

— The second supply, which contains no radiation, will flash to steam and be piped to a turbine connected to an 800-megawatt generator.

— After a week of low-power testing, the plant will start pumping power to homes.

— As the steam condenses, lukewarm water vapor will rise in wisps over Unit 1's twin cooling towers. The vapor will not pass through the reactor and will not be radioactive.

To reach the full temperatures and pressure needed to produce 800 megawatts, neutrons must split trillions of atoms each second in the reactor. About 6 pounds of uranium — the energy equivalent of 7,700 tons of coal or 36,400 barrels of oil — will be consumed daily at Unit 1 when it reaches full power.

More than 900 workers are ready for restart, many more than the 320 working at Unit 1 before the 1979 accident that crippled Unit 2. Close to \$100 million in new equipment has been installed in Unit 1 since the accident.

GPU officials have promised an annual savings of \$58 million to 1.6 million customers of Metropolitan Edison Co., Pennsylvania Power & Light Co. and Jersey Central Power & Light Co.

Restart of TMI-1 under way

Low-power testing planned for today

By Frank Lynch
Patriot-News

Final approval for restart of Three Mile Island's Unit 1 reactor has been given by a Nuclear Regulatory Commission official.

NRC Region One Administrator Thomas Murley gave his approval for restart of the undamaged reactor at 10:19 a.m., Philip R. Clark, chairman and chief executive officer of plant operator GPU Nuclear Corp. said.

The actual first step in the restart, based on approval given yesterday, began at 4:28 a.m. today.

Murley's approval was needed before the plant could begin producing a nuclear chain reaction.

The process leading to the reaction began when workers pulled six of the reactor's eight groups of control rods from the reactor's core, GPU Nuclear spokeswoman Lisa Robinson said.

At 5:50 a.m., workers started diluting boron concentrations in the reactor water. Boron inhibits the chain reaction.

Clark, at a press conference today at the TMI Training Center across from the plant, said "thorough, careful attention" was being given to the restart of the reactor, which has been shut down since the March 1979 accident at its sister reactor.

He said the chain reaction was expected to occur about 2 p.m. today, less than 24 hours after the U.S. Supreme Court decided not to continue a stay blocking restart.

Clark said the plant would be operating at about 1 percent power by tonight and would remain at that level for a couple of days. The reactor would be taken gradually to full power, which he expects will occur in about three months.

Clark said GPU Nuclear could begin selling power from TMI in about two weeks.

The mood of workers at the plant was good, Clark said. Control room operators "are pleased, confident and satisfied that they are able to do what they have been trained to do," he said.

Clark began his remarks: "Good morning. And I can say that

with somewhat more conviction than on prior occasions."

The north gate outside TMI, where about 15 demonstrators were arrested last night, also was quiet today. In reaction to the decision to allow the plant to be restarted, anti-nuclear activists charged last night that "Democracy has died."

Clark answered the claim by saying: "The democratic process worked. The hearings were held and everyone had a chance to be heard."

The high court, by an 8-1 vote with Justice William J. Brennan dissenting, cleared the way for restart yesterday when it decided not to consider reviewing an ap-

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peal by the citizens group TMI Alert.

TMI Alert had sought hearings on the integrity of TMI operator GPU Nuclear Corp. The state and the Union of Concerned Scientists joined in the appeal.

Justices also lifted a court-ordered June restart stay that gave TMI time to appeal the Nuclear Regulatory Commission's May 29 approval of restart.

Despite the operations on the island, TMI said it still plans to seek another restraining order in the 3rd U.S. Circuit Court of Appeals today on an appeal to the court by various state officials seeking to lift Unit 1's license because of the character of plant management.

The appellate court ruled 10-2 last month against TMI's petition for safety hearings and the Supreme Court declined to review that ruling yesterday. The court provided no reasons for its decision, and its actions do not preclude their consideration of a formal appeal by TMI.

Brennan halted restart last

week and turned the case over to the full court Monday. TMI had argued to Brennan that restart would cause "irreparable, psychological" damage to people living nearby.

Unit 1, which was shut down for refueling at the time of the Unit 2 accident and kept shut by the NRC, has been heated to operational pressure and temperature for most of the past few months.

In commenting on restart, Thornburgh said today that "our principal concern is, now that the courts have spoken, that every caution be exercised in the restart procedures."

"This morning our own monitor from the Department of Environmental Resources, funded by the expanded appropriation we sought and received from the General Assembly, is on the scene and we will participate to the extent that is necessary in assuring that every precaution is taken."

Addressing the state's position not to continue legal challenges with TMI Thornburgh said: "Well, these are folks who have a different vantage point than I do. I'm not an ideological oppo-

nent of nuclear power. My concern is with safety and the operation of this particular facility. We've argued the case as far as we can go."

"We've been to the Supreme Court of the United States. We accept the rule of law and finding of that court, and it's time to move on and exert our effort to see that that restart procedure is in fact carried out in a cautious and safe manner."

TMI has based its restart appeal on the contention that some of what the NRC calls "conditions" on GPU Nuclear's license actually are license amendments that require public hearings.

Chief among the issues the NRC did not allow hearings on was the 1978-79 water leak rate falsifications at Unit 2. GPU Nuclear's predecessor company, Metropolitan Edison Co., was convicted of criminal misconduct and pleaded no contest to six other counts of rigging the NRC reports.

TMI and other intervenors wanted to discover in a public hearing the extent to which utility officials were involved with or condoned the leak rate falsifications.

The TMI case turned at the

regulatory level in the utility's argument that its operating company had been completely revamped and past abuses had been corrected enough to assure safe operation of Unit 1.

The Reagan administration endorsed restart.

The case turned in the federal courts on the strong precedent that federal judges rarely overturn decisions by agencies that have apparently fully exercised their expertise to reach a decision.

As the acting U.S. solicitor general, Charles Fried, told the 3rd Circuit Court:

"The commission held what is probably the most comprehensive adjudicatory proceeding that it has ever conducted. That hearing lasted for nearly six years, generating transcripts exceeding 33,000 pages [not including the prefilled testimony of nearly 200 witnesses and hundreds of exhibits] and an administrative record far exceeding 100,000 pages."

Staff writers David Morris, Christopher Quinn and Mick Rood contributed to this story.

15 arrested last night

TMI relatively calm today

By Wendi Taylor
Patriot-News

All was relatively calm early today at the north gate of Three Mile Island.

But last night, it was a different story.

For some it was the beginning; for others the end.

"It's just the beginning," Doug Bedell, spokesman for GPU Nuclear Corp. at Three Mile Island, said last night.

"Now we have to show we can run this plant."

But for 45 protesters who gathered at the north gate last night, it was the end of a six-year battle to block the restart of TMI Unit 1.

"This will be a solid demonstration by a lot of angry people," Eric Epstein of Three Mile Island Alert said as he made his way to the plant gate last night.

Carrying banners saying, "In God We Trust . . . TMI We Don't,"

Close-up:

- Permission to restart disappoints officials. Page F1
- From start-up to full power expected to take 3 months. Page F1
- Restart controversy has been a day-to-day story for 6 years. Page F1

and "RIP American Democracy Died Mar. 28, 1979," the group stood in a steady rain to herald what they called the "end of democracy."

Fifteen protesters were dragged or carried from the gate and arrested for blocking the utility company's right of way, a summary offense.

"It is an honor to be arrested for such a good cause," Epstein said. "This is unbelievable that citizens have to get arrested to be heard. We just have no choice . . . This is a disgrace."

When State Police Sgt. James

Crews came to arrest him, Epstein wrapped the red, white and blue banner he had been holding around himself and had to be carried away. It was the third time he had been arrested at the TMI gate.

"I think this shows who owns America," said Cherie Friedrich of Harrisburg. "All our representatives know how we feel, but corporate America is getting its way." Friedrich was arrested by troopers moments later.

TMI Alert urged people to leave the area for the first critical

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State troopers remove protesters from north gate of TMI

Protests

From Page A1

days of the restart.

"That is unfortunate advice," Bedell said. "The public should not be alarmed about this." He said GPU will earn the trust of the people with time.

But protesters continued to charge the plant's management with incompetence.

"These people just can't follow the instructions, and they are going to run a nuclear plant?" asked Wendy Smith of Harrisburg. "I've never been arrested before, but I'm tired of being afraid." Last night she was arrested.

"It brings back all the old feelings of six years ago. There's lots of anxiety," said Susan Shapiro of Harrisburg, who joined the demonstration.

"It's a funeral for a lot of us," said Kay Pickering of Harrisburg, one of the founders of TMI Alert that organized last night's demonstration. "I think the governor said us out. He was not vehement enough in the cause."

TMI Alert today will file for an emergency injunction in the 3rd U.S. Circuit Court of Appeals in an effort to stop the restart. "We

have come too far to stop now," Epstein said.

Elizabeth Chevey, 62, of Middletown stood before the gate with tears in her eyes, waiting to be arrested for joining the protest.

"I will do what I have to . . . what GPU forces me to do. I have six children and grandchildren who I want to live. I think this is such an injustice," Chevey said.

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