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Carlisle, PA 17013

717-245-1399

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Three Mile Island Alert

The Newsletter of Three Mile Island Alert **March 2000**

NRC Staff Criticizes Commission's New Regulatory Process

by Scott Portzline, TMIA

For the first time ever, an inside look at the Nuclear Regulatory Commission (NRC) shows morale could threaten the ability of the NRC to carry out its statutory mandate to protect the public health and safety. A major overhaul of the regulatory process is in the works and some of the strongest criticism is coming from within the commission itself.

While the NRC publicly states that it is streamlining regulations to help utilities and inspectors perform with greater safety and efficiency, the NRC staff told a different story to the investigative arm of congress. The majority of NRC staff who responded to the US General Accounting Office survey believe that the new risk-informed regulatory oversight process will reduce plant safety margins. An incredible seven

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AmerGen Acquires Clinton & TMI-1; More Purchases Planned

from a February 2000, American Nuclear Society Nuclear News article

AmerGen Energy Company, the joint venture created by PECO Energy Company and British Energy Company in 1997 to compete in the nuclear plant buyers' market, purchased a pair of nuclear units less than a month before the start of the new year. On December 16, AmerGen acquired the Clinton plant, in central Illinois, for $20 million from Illinois Power Company. The transaction marks AmerGen's first completed purchase of a U.S. nuclear power plant. Five days later, on December 21, AmerGen closed on the $100-million deal for the purchase of the Three Mile Island-1 plant, in Londonderry, Pa., from GPU, Inc.

The sale of Clinton, a 930-MWe (net) General Electric boiling water reactor, comes one year after Illinois Power's decision to exit the nuclear power business and less than six months after Illinois Power and AmerGen reached a definitive agreement on the terms of the sale.

AmerGen assumes responsibility and liability for operating and ultimately decommissioning Clinton. Illinois Power has transferred the existing decommissioning trust fund of $98 million and is making additional payments to the decommissioning trust funds intended to be sufficient to provide for the actual decommissioning of Clinton by 2026, when the plant's operating license is scheduled to expire.

Illinois Power will purchase at least 75 percent of Clinton's electricity output through 2004.

To purchase TMI-1, AmerGen paid $23 million to GPU and will pay another $77 million over five years for the plant's nuclear fuel. A second

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inside...

Three Mile Island Alert

Three Mile Island Alert (TMIA) is a non-profit citizens' organization dedicated to the promotion of safe-energy alternatives to nuclear power, especially to the Three Mile Island nuclear plant.

Formed in 1977 after the construction and licensing of TMI Unit-1 and the construction of the infamous Unit-2, TMIA is the largest and oldest safe-energy group in central Pennsylvania.

TMIA members interested in specific aspects of nuclear power are encouraged to join one of TMIA's committees. These committees include:

- Radiation Monitoring
- Low-level Radioactive Waste
- Health Effects of TMI
- Nuclear Plant Security

Three Mile Island Alert
315 Peffer Street
Harrisburg, PA 17102
Phone: (717) 233-7897
FAX: (717) 233-3261

On the Internet at:

WWW: http://www.tmia.com
&
EMail: tmia@pipeline.com

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out of ten nuclear plant inspectors say they fear that the new regulatory process will not identify and correct degrading performance.

Three Mile Island Alert is very troubled that inspections and regulations are being lowered to a level similar to that of the 1970's which produced the TMI accident and several other "close calls." Once again, "the fox will be guarding the hen house" if those who stand to profit have their way. Three-fourths of the NRC staff told GAO auditors that utilities and industry groups had too much input and influence in developing the new regulatory process.

Inspection hours might be reduced even further according to two-thirds of plant inspectors. The same percentage have misgivings that licensees will manipulate performance indicator data and seventy-six percent say the proposed process could mask problems. More than half of the inspectors worry that there will be an increased reliance on utilities' self-assessments rather than actual observations by the NRC.

According to the January 2000 GAO report titled "Nuclear Regulation: NRC Staff Have Not Fully Accepted Planned Changes," the staff has "expressed high levels of uncertainty and confusion about the new directions in regulatory practices and challenges facing the agency." Only twenty percent of the NRC staff say that trust exists between NRC senior management and the NRC staff!

The NRC's Office of the Inspector General concluded that "without significant and meaningful improvement in management's leadership, employees' involvement, and communication, NRC's climate could eventually erode the staff's outlook and commitment to doing their job."

The GAO noted that one-fourth of NRC staff said they were considering resigning and almost half said they would not recommend a colleague take a job with the commission. Nearly one-third of the staff said they were dissatisfied with the NRC.

The GAO report concluded that, "NRC has neither established long-range goals to implement a risk-informed approach nor developed performance indicators to determine whether the agency has met the goals. ...Without such information, NRC has no way to determine where it is going, how it will get there, or what progress has been made."

The GAO has provided adequate warning that the NRC is headed into a void which could allow the world's most technologically advanced nation to overestimate its abilities and harm its citizens. As a nuclear watchdog group, we are astounded that this level of criticism, normally coming from the anti-nuclear movement, is being trumpeted by the NRC staff and inspectors. ▣

Canadian Group Pushes Broader Study of Nuclear Risk

from a January 22, 2000, The Toronto Star article

The announcement of a new national surveillance program that will look for higher rates of cancer among people living near nuclear power stations has met with a lukewarm response from a Durham Region citizens group.

Irene Kock, of the Nuclear Awareness Project, said the program "just doesn't go far enough," and she might not trust interpretation of the data. "We'd like to see more cause-and-effect studies," said Kock, whose group monitors the Pickering nuclear plant. "Surveillance studies just aren't enough. We already know the cancer is there . . . we'd like to know what's causing it." Kock is also disappointed the program focuses solely on cancer and ignores the incidence of birth defects.

The national program, unveiled Thursday by the Atomic Energy Control Board in response to widespread public fears, will do continuing surveillance of nuclear installations. The program will also monitor populations near uranium mines, atomic research facilities, and fuel-processing plants. It is to begin within months as an Ontario pilot project, possibly centered on the Bruce or Pickering nuclear stations, and will go national by 2002. The federal health department and the control board will run the program, using data collected by Ontario Cancer Care and similar agencies.

Kock, who welcomed the initiative despite misgivings, said she would prefer an independent analysis of collected data, given that the control board typically interprets the findings. "We really need something more removed," Kock said. "We need an interpretation exclusive of a government agency or the utility."

Pickering Mayor Wayne Arthurs cheered the "long overdue" announcement. "This is a very progressive move and shows a welcome widening of the (control board's) responsibility." Arthurs said creation of the surveillance program signals more inclusion of the community in the board's actions.

Two control board studies in 1990 and 1991 found that children up to 14 living near the Bruce and Pickering power plants had a leukemia rate 40 per cent higher than the provincial average. But the control board's consultants said these higher rates could be simply chance. Another 1991 report counted 24 babies with Down syndrome born 1973-1988 to mothers near the Pickering plant, compared with the expected 13.

The surveillance system marks a major shift for the nuclear watchdog, which has stated in the past that nuclear plants cannot produce cancers because regulations keep radiation well below problem levels. ▣

Wackenhut to Provide Guards at Three Mile Island Plant

from a January 15, 2000, The Palm Beach Post article

Wackenhut will take over security operations at the Three Mile Island nuclear plant, the new owners of the complex said Friday.

Terms were not disclosed.

AmerGen, which took over operations of the plant's Unit 1 reactor last month, will contract with Palm Beach Gardens-based Wackenhut, which also provides security at other U.S. nuclear plants, AmerGen spokesman Ralph DeSantis said. ▣

Public Hearing in York on PECO Energy's Unicom Plan

On **April 4, 2000**, the PA Public Utility Commission will hold a public hearing on PECO Energy's proposal to create Unicom with Commonwealth Edison. If approved, Unicom would operate, possess, or monitor 20 nuclear plants in Illinois, New Jersey, and Pennsylvania, including Peach Bottom.

The hearing will be held at **7:00 pm at:**
Holiday Inn (Red Lion Room)
I-83 & Rt. 30 (Exit 9E)
334 Arsenal Rd
York PA (717) 845-5671

Special thanks to TMIA's Eric Epstein, who successfully petitioned the PUC to add this public meeting in York. So, if you care, be there!

House Democrats Keep Pushing NRC on Recycled Metals Issue

from a January 10, 2000, Nuclear Fuel article

Three Democratic congressmen continue to press the NRC to justify its "hands-off" position on the release of radioactively contaminated materials into the marketplace. In a Dec. 23, 1999, letter to NRC Chairman Richard Meserve, Reps. John Dingell (D-Mich.), Ron Klink (D-Pa.), and Edward Markey (D-Mass.) said it appears the agency "has abdicated its responsibility to the public in order to justify its failure to follow its implementing act, its own regulations, and the directives of Congress."

The House Democrats' letter was a response to Meserve's Dec. 20 reply to their initial Oct. 25 letter. In the October letter, they questioned why NRC was not required to license the transfer or sale of 6,000 tons of volumetrically contaminated nickel from a former DOE gaseous diffusion plant for reuse, including in consumer products.

BNFL Inc., the U.S. subsidiary of British Nuclear Fuels plc, and Manufacturing Sciences Corp. (MSC), which it owns, received a $238-million contract in 1997 to clean up DOE's closed gaseous diffusion plant at Oak Ridge, Tenn. and to recover and recycle metal from the site. Last March Tennessee approved a license amendment for MSC that permits the unrestricted sale of the radioactively contaminated nickel.

The congressmen called NRC's Dec. 20 letter "extraordinary," stressing their criticism in underlined type. The letter made clear the lawmakers did not buy NRC's "curious position" that "contaminated material sold into interstate commerce that has absolutely no value added by the radioactive material or may be viewed as having a lesser value because of the radioactive content requires less regulation, labeling or warning to the public of its content than products in which the radioactive material has a beneficial effect." They said NRC's "unique reasoning" has not been publicly revealed before, although the agency claims a 40-year history.

The letter also criticized NRC statements that the nickel was not a "product" or "commodity" because MSC did not deliberately insert the byproduct material into the nickel, nor was the material present because of the benefit added by its radioactive properties. "To say that this is a distinction without meaning is an understatement," the letter said. "But this convoluted interpretation of the Atomic Energy Act and implementing regulations -- not supported by a single piece of documentation -- would have a monumental economic effect on a number of industries."

The congressmen said the NRC's position would let nuclear utilities, federal weapons sites, and other nuclear material handlers release tens of millions of tons of radioactive metal and other materials into interstate commerce before a uniform national standard is established. Also, the quantities or concentration of radioactive material could exceed that in products already subject to NRC licensing, they said. The letter also noted that it costs generators billion of dollars to dispose of the material. "With its action, the NRC has determined that these costs would be passed on to the steel industry and all industries using steel, as well as the general public."

The Specialty Steel Industry of North America (SSINA) last week criticized any unrestricted release of radioactively contaminated scrap metal, saying U.S. producers of specialty steel have adopted a "zero tolerance" toward potentially radioactive scrap metals. SSINA members have installed highly sensitive radiation detectors to monitor every incoming shipment of scrap metal, and no radioactively contaminated metal will be accepted, it said.

The congressmen also criticized NRC's "artificial distinction," which the lawmakers said would allow millions of products to contain radioactive components because the components were not deliberately inserted or because they have no benefit. Congress and the public have directed the NRC to control the manufacture, processing, transfer, and use of all commercial products containing radioactive materials, regardless of the source, they said. "Every attempt of the NRC to abdicate responsibility has been rejected."

They added: "Not surprisingly, the NRC, after six weeks' consideration of our letter, could not provide any supporting documentation for its alleged 40-year policy. In fact, every legislative and regulatory action opposes its interpretation." ▣

Nuclear Fears Kill U.S. Plan to Sell Nickel

from a January 12, 2000, NY Times article

The Energy Department is backing away from a plan to sell its huge stock of surplus nickel, a metal used in stainless steel and other alloys, because the material, left over from nuclear weapons manufacture, may be too radioactive to sell on the open market, officials said today.

The department had announced a plan in August 1997 to sell 6,000 tons of nickel later this year, for $41 million, in a program to sell materials left over from manufacturing weapons. Another 10,000 tons would be sold later. The material was radioactive, but there was no standard measure of how much radioactivity in such material is unsafe, so the plan did not violate any rules.

But the idea horrified scrap dealers and steel industry leaders, who feared having to explain to their customers that their product was even mildly radioactive.

"It would hurt our workers and our facilities, if it isn't in fact safe, and the people won't ever believe it's safe," said Thomas Sneeringer, senior vice president of the American Iron and Steel Institute, a trade group here.

The Energy Department has been seeking a ruling from the Nuclear Regulatory Commission, an independent agency that has jurisdiction over most uses of radioactive materials. But the commission recently had a setback, concluding three weeks ago that a contractor it had hired to research the issue had a conflict of interest, because the contractor was also in the radioactive waste recycling business.

And Congressional critics said the radioactive metal could end up in things like stainless steel tableware and braces for children's teeth. Three Democrats on the House Commerce Committee, Representatives John D. Dingell of Michigan, Ron Klink of Pennsylvania and Edward J. Markey of Massachusetts, have been hammering the commission for failing to develop a standard of radioactivity for materials like the nickel in which the radioactivity permeates the material, as opposed to sitting on its surface. The question is becoming more pressing as the energy agency and electric companies take apart old nuclear plants. The 6,000 tons are at the former K-25 plant near Oak Ridge, Tenn.

Materials that are surface-contaminated can be cleaned, but it is unclear whether those in which the radioactivity permeates can be.

The NRC regulates consumer products to which radiation has been intentionally added. But the commission has maintained, until recently, if the metal includes radioactive material that was not added for "beneficial effect," the decision was up to the state, in this case Tennessee.

And in Nashville, the director of the state's Division of Radiological Health approved the release of the nickel. ▣

(Continued from "AmerGen," page 1)

unit at the site, TMI-2, which was permanently shut down after its accident in 1979, will remain under ownership of GPU.

GPU is leaving the power generating business to focus on the transmission and distribution of electricity. GPU and AmerGen first agreed to the sale of TMI-1 in July 1998.

AmerGen has assumed full responsibility for the decommissioning of TMI-1, which has been prefunded by GPU for an amount of $230 million. The unit, a 786-MWe (net) Babcock & Wilcox pressurized water reactor, is licensed to operate to 2014.

GPU has agreed to purchase the energy and capacity from TMI-1 from January 1, 2000, through December 31, 2002, at fixed prices.

AmerGen has another deal pending with GPU, this one for the $10-million purchase of Oyster Creek, in Forked River, N.J. AmerGen also has a tentative deal signed with Vermont Yankee Nuclear Power Corporation to purchase the Vermont Yankee plant, in Vernon, Vt., for $23.5 million.

A proposed deal to purchase Nine Mile Point-1 and a large share of Nine Mile Point-2, in Scriba, N.Y., from Niagara Mohawk Power Corporation for $163 million has been put on hold at least for the time being by a purchase bid made by Rochester Gas and Electric Corporation. Currently, the New York state Public Service Commission is investigating the similar bids made by AmerGen and RGE for the NMP plants. ▣

NRC to Withhold Nuke Plant Information about Shutdowns

from a December 27, 1999, The Energy Report article

To partially protect nuclear operators from pressures of the electric wholesale market, the Nuclear Regulatory Commission (NRC) has agreed to keep information about plant shutdowns and restarts confidential unless the plant owner waives the right.

In the past, the NRC would supply information about most aspects of nuclear licensees' affairs, but with the move toward marketplace competition, it became evident that the policy was having an effect on wholesale prices. Although the commission does not require companies to file information about outages, most have done so voluntarily to help facilitate inspection schedules and monitoring. "In light of the impact of deregulation, NRC reviewed its policy regarding release of outage information," the announcement said.

"The agency concluded that outage information, if provided in writing with a request that it be considered confidential business information, or proprietary, would likely be withheld from public disclosure under terms of commission regulations and the U.S. Trade Secrets Act."

To comply with this decision, the NRC said that unless the company agreed to allow the information to be released, or if the outage was part of a public docket, then it would not release the information "without first providing a licensee an opportunity to formally request it be withheld."

The NRC's Mindy Landau said it had become obvious that the new regulations were needed. "The industry has changed so much over the past several years that it needed to be done," she said, "We have seen shutdown information directly affect the prices on the spot market for electricity."

The decision was not easy, however, because of the NRC's desire to keep as much information as possible public, Landau said.

Utilities will have 15 days to decide whether the information on the shutdown would harm their financial situation and request that the information be kept secret. The NRC will then decide whether to continue keeping it confidential past that time period.

Public interest groups are concerned about this decision. David Lochbaum, nuclear safety engineer at the Union of Concerned Scientists, said that his group is concerned that the NRC's decision will require additional efforts on the part of the public to monitor nuclear plant performance. "The industry has claimed that because of deregulation, some of that information about plant outages becomes a competitive issue. We can sympathize with that. We understand the business angle," Lochbaum said. "The one possible drawback is that it somewhat erodes public participation in the process."

Even if utilities agree to release the information, the 15-day lag time the NRC imposes will limit the window of opportunity for interested parties to raise issues with the commission about plant startups, Lochbaum said.

Lochbaum said the NRC's daily events reports would probably still include unexpected outages, at least for situations in which plants automatically trip off-line because of a malfunction. However, the daily events reports won't include cases where plants are manually shut because of equipment problems. Those are deemed planned outages, even if the plant is forced off line in response to malfunctioning equipment or other concerns, he said.

For longer range planned outages, the American Nuclear Society publishes a biannual listing of upcoming outages in its Nuclear News publication. ▣

Pennsylvania Utilities Fight Counties over Tax Assessments

from a December 9, 1999, Nucleonics Week article

Pennsylvania electric utilities on the road to deregulation are fighting local governments' real estate tax value assessments on their nuclear generating assets.

A law enacted in May changed the state's Public Utility Realty Tax Act (Purta) to require deregulated electric companies to pay local property taxes rather than paying a property assessment to the state, as they had under regulation. At issue is how to set a market value for a nuclear plant. Estimates in Pennsylvania range from more than $3.9-billion for Susquehanna to $50-million for Three Mile Island-1, but every utility is taking its assessment to court.

The Montgomery County Assessment Board first valued PECO's Limerick at $939-million. PECO asked the board to reconsider, and filed an Aug. 31 appeal to the County Common Pleas Court just before the board announced a slightly reduced assessment of about $912.5-million.

The assessment board's second ruling came after a hearing in which PECO claimed that the current estimated cost of $1-billion to decommission the plant in 2026 exceeded the facility's value, so Limerick's assessment should be reduced to zero, said PECO attorney Michael

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Corporate Take-Over of World's Nukes

from a Spring 2000 Earth Island Journal article

British Energy (BE), Britain's privatized nuclear energy conglomerate, has formed a US-based entity called AmerGen. Under the banner of deregulation, AmerGen has joined forces with Philadelphia Electric in an attempt to purchase 20 US nuclear powerplants - including Three Mile Island, Nine Mile Point, Oyster Creek, and Vermont Yankee. Philadelphia Electric already owns Peach Bottom and Limerick. AmerGen could soon control 20 percent of US nuclear generating capacity.

BE controls 11 British reactors while its Canadian branch, Canegen, is set to purchase several aging Canadian reactors. By the end of 2000, this multinational could control ten percent of the world's nuclear capacity and 25 percent of the US' nuclear power.

The decrepit state of nuclear power has never been more apparent. AmerGen is picking up TMI for a paltry $100 million and buying the 13-year-old Clinton nuclear plant for $20 million (marked down from $4.2 billion).

How can AmerGen hope to make any money running these run-down reactors? "It's quite simple," The Nuclear Monitor explains. "Run them as cheaply as possible for as long as possible." AmerGen will sell its power back to the same companies that sold the reactors.

In Britain, the Monitor explains, AmerGen's owners found out how to turn a profit on privatized nukes: "The best way to cut costs was to fire nuclear workers and contract out as much work as they could" thereby dispensing with workers' benefits. Overtime for the remaining employees has averaged 60 percent. A secret internal memo leaked by Friends of the Earth reveals the company plans to fire another 300 workers.

If AmerGen plays its cards right, it will reap a windfall by collecting "decommissioning" fees (funds set aside to close down these plants). The Nuclear Regulatory Commission (NRC) is bending over backwards to make this happen. The Monitor reports how, "in a virtually unprecedented move for a regulatory agency ... the NRC asked Congress to remove its authority to examine antitrust issues involving nuclear utilities." This move would bar any public review of these nuclear sales and the Senate Environment Committee has agreed to honor the NRC's request. ▣

NIRS Challenges Oyster Creek License Transfer

from a January 6, 2000, NIRS press release

The Nuclear Information and Resource Service (NIRS) January 5, 2000, filed a formal petition with the U.S. Nuclear Regulatory Commission challenging the proposed transfer of the Oyster Creek nuclear reactor's operating license from GPUN to AmerGen Energy Company (LLC). The petition requests an adjudicatory hearing before a three-judge Atomic Safety and Licensing Board (ASLB).

NIRS charged in its 40-page petition that AmerGen is financially unqualified to operate Oyster Creek. AmerGen has few assets of its own and as a Limited Liability Corporation, the assets of its corporate parents, PECO Energy of Philadelphia and British Energy of the United Kingdom, cannot be touched in the event major repairs are needed or financial setbacks occur. PECO Energy and British Energy have jointly committed only $110 million for operating costs at all of AmerGen's recently-purchased reactors, including Three Mile Island-1, Clinton, and Oyster Creek. AmerGen also has committed to purchasing the Vermont Yankee reactor, and is involved in a disputed purchase of the Nine Mile Point-1 and -2 reactors in upstate New York.

"This type of arrangement puts incredible pressure on the company to operate a reactor even when it should be closed for maintenance or repairs. The NRC long has said that 'placing power production above safety' is a utility's greatest sin, but since its only revenues will come when the plant operates — and it has virtually no cushion — the pressure on AmerGen to run Oyster Creek will be paramount," said Michael Mariotte, executive director of NIRS.

NIRS also charged that AmerGen's British parent, British Energy, is unfit to own or operate a reactor in the United States. Citing a recent investigation by the U.K. Nuclear Installations Inspectorate (NII), and reports on still-secret British Energy documents, NIRS said that since its inception in 1996, British Energy has engaged in deliberate and massive cost-cutting measures and worker layoffs that have compromised public health and safety. At least nine safety-significant events occurred at British Energy reactors just from mid-August to mid-November 1999.

"British Energy is a relatively new company that is trying, rather unsuccessfully, to operate 11 nuclear reactors in the United Kingdom. Its only real areas of expertise are in laying off workers, cutting costs, and flouting the U.K.'s nuclear regulations. British Energy has demonstrated that it is uniquely unqualified to operate atomic reactors in the United States. And, as a 50% partner in AmerGen, this makes AmerGen unqualified as well," said Mariotte.

The NIRS filing also argued that because GPUN had been preparing to close Oyster Creek in 2000, rather than continuing to operate the reactor, the utility has deferred making numerous necessary safety-related improvements to the facility. In addition, in order to continue operations, Oyster Creek would have to make a highly controversial and dangerous expansion of its irradiated fuel pool — a proposal that is currently under investigation by five separate NRC offices.

"Two years ago, GPUN was asking $700 million for Oyster Creek and finally settled with AmerGen for $10 million," said Paul Gunter, Director of the Reactor Watchdog Project for NIRS. "After planning to permanently close the reactor for the past two years by deferring all sorts of corrective action and maintenance, GPUN now plans a hasty 'come-from-behind strategy' that endangers the public safety," continued Gunter. "We think GPUN must now follow through on all their cost savings towards decommissioning the reactor in 2000 and permanently close it," he concluded.

NIRS also filed contentions relating to antitrust issues, and on AmerGen's deletion of material related to Oyster Creek's Decommissioning Trust Fund. It is NIRS' belief that this material would demonstrate that AmerGen intends to keep any remaining funds after decommissioning, rather than return these funds to ratepayers. The Decommissioning Trust Fund is entirely ratepayer-funded. ▣

AmerGen Rejects NIRS' Charges

from a January 20, 2000, Nucleonics Week

AmerGen Energy Co. (LLC) says an antinuclear group has filed no viable contentions in its attempt to bar transfer of the Oyster Creek license from GPU Nuclear to AmerGen. The Nuclear Information & Resource Service (NIRS) is charging that AmerGen, as a limited liability company, has insufficient financial backing to operate multiple reactor sites. In a Jan. 13 response to NIRS' request to intervene, AmerGen said the group's Jan. 5 petition fails to meet NRC requirements and should be dismissed. AmerGen asserts that not one of NIRS' six contentions is valid.

Those contentions range from AmerGen's alleged inadequate financial status to operating practices of one of its parent companies to claimed deferrals of safety and maintenance procedures at Oyster Creek, since GPU had earlier planned to decommission the plant this year.

In its petition, NIRS charged that AmerGen is unqualified to operate Oyster Creek because, as a limited liability company, its parents British Energy (BE) and PECO Energy Co. are shielded "from liability and accountability when things go wrong." NIRS claims that AmerGen has few assets of its own as an LLC and will rely on the generation assets of its plants. So far, AmerGen has a contingency fund of $110-million it can draw on for the two plants it operates, TMI-1 and Clinton, in the event their revenues are not able to cover unforeseen outage costs. NIRS said that the contingency fund would become insufficient if AmerGen adds Oyster Creek or other plants it plans to buy.

In its response, AmerGen said NIRS is wrong to assert that the company will have to rely on Oyster Creek's operating revenues alone, since the company will receive revenues from at least two other plants. AmerGen also pointed out that in its purchase agreement with GPU subsidiary Jersey Central Power & Light Co., JCP&L agreed to buy power from Oyster Creek through March 2003.

NIRS said this is an area of concern since Oyster Creek may not be able to continue to reliably operate at its present capacity and to date, has not been able to generate electricity at a competitive rate. In its response, AmerGen said NIRS has "no basis or expert opinion or documentation" as required by NRC regulations to show "AmerGen's ability to sell Oyster Creek's power at market rates is a genuinely disputed, material issue."

AmerGen said its financial information complies with NRC requirements and was sufficient for license transfers of TMI-1 and Clinton. AmerGen said its financial qualifications are not compromised by its nonutility standing and that its reliance on operating revenues to cover operating expenses is appropriate. AmerGen said it met NRC financial assurance requirements for Oyster Creek without the $110-million contingency fund from its parent companies, and said it meets NRC financial assurance requirements in 10 CFR 140.21 (the Price-Anderson Act) that require a $10-million guarantee for each licensed reactor.

The NIRS petition claims AmerGen may employ risky cost-containment strategies similar to those NIRS alleges are used by its British parent company. NIRS said BE has had nine safety-significant events at its 11 reactors in the England and Wales from mid-August to mid-November 1999. BE is also in talks with the Nuclear Installations Inspectorate (NII) in the U.K. about whether technical staff reductions at BE subsidiaries could increase safety risks.

AmerGen responded that it is entitled to the presumption it will comply with NRC safety regulations. It also said NIRS provided no basis to claim AmerGen would sacrifice safety to maintain production goals and that NRC's oversight programs are in place to ensure the safety requirements will be met.

AmerGen also challenged the legal standing of the two NIRS members with whom NIRS filed the petition. Mariotte said that at least one of the two, who won a request last month to intervene against an Oyster Creek license amendment request to move heavy loads from the spent fuel pool while the unit is at power, should also have standing in a license transfer. Potential intervenors must demonstrate they live, work, or otherwise spend time near a nuclear station to merit standing. ▣

Nuclear Plant License Extension: Trying to Breathe New Life into A Dying Industry

By David Lochbaum, Union of Concerned Scientists

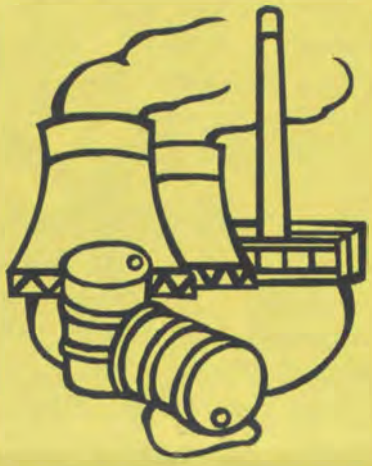
Neil Young famously sang, "It's better to burn out than to fade away." Wise words indeed for his fellow rock stars. But for a nuclear power plant a quiet retirement is much preferable to going out in the blazing glory of a meltdown.

The Calvert Cliffs nuclear power plant in Lusby (about 65 miles from Annapolis) is at the forefront of the growing debate over the fate of aging nuclear power plants. The two reactors at Calvert Cliffs have been operating for nearly 25 years, and have about 15 years left on their operating licenses. But in an unusual move, the owner of the plant, the Baltimore Gas and Electric Co., recently applied to extend the reactors' licenses for another 20 years.

No nuclear power plant has ever operated for the full 40 years of its license, and BGE's application is the first formal request for a U.S. plant to operate beyond 40 years. The average operating life of the 27 permanently closed U.S. nuclear power plants was about 15 years, and no nuclear plant has operated for more than 30 years.

The fate of Calvert Cliffs is of great interest to the nuclear industry. Given that no nuclear power plants have been ordered since 1978, the nuclear industry will likely fade into obscurity early in the new century without the extended lease on life license renewals could provide.

Overseeing this process is the Nuclear Regulatory Commission, or NRC, which has consistently fallen short in keeping safety ahead of the bottom line.



The probability of failure for both humans and machines is highest in the early and late stages of life. The partial meltdown at Three Mile Island and the explosion at Chernobyl were among a number of notable failures that occurred during the early, or break-in, phases of nuclear power plants. Both of these accidents struck during the plants' first year of operation. Although there is no law of probability that predicts an equal number of nuclear accidents at the end of reactors' lives, the prudent course of action is to retire aging plants before they reach the point where reliability drops off markedly.

In people years, the bid for the Calvert Cliffs reactors to live past the 40-year milestone might not sound all that impressive. Consider, however, that these reactors are splitting the atom with technology that was developed when eight-track tapes were cutting edge. And just as a 1975 Pinto must struggle through an inspection before it is deemed safe for the road, older nuclear power plants must be proven safe before having their licenses renewed. Unfortunately, the only thing the NRC's renewal process for Calvert Cliffs proves is that the agency is a thoroughly inept regulator.

The NRC estimates that it will spend 30 months reviewing the Calvert Cliffs license renewal application. And while it claims that this process is open to full public participation, it allowed only a 30-day public comment period on the application. After this period was over, BGE submitted more than 40 supplements to the application and 13 pages of corrections — all apparently unworthy of public review.

So can the NRC alone determine whether an aging plant is a threat to the public? The U.S. General Accounting Office recently concluded that the NRC is unable to oversee itself, let alone the nation's operating nuclear power plants, reporting that the agency does not draw the line between safe and unsafe for nuclear plants and has allowed safety

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levels to drop.

The issue of radioactivity release from the Calvert Cliffs plant is an egregious example of NRC ambivalence on safety. Only a handful of nuclear plants were in operation when the two reactors at Calvert Cliffs were started. Data on the effects of radiation were scarce, and the NRC allowed the plant to begin operating on the assumption that radioactivity routinely released by the plant into the air and water would not threaten human health.

While there have been claims that the plant's radioactivity release has harmed the public, the NRC has yet to confirm or refute its original assumption.

In a recent study on the environmental impact of Calvert Cliffs, the NRC detailed the plant's effect on fish and shellfish populations, but offered not a single word on the impact of radioactivity on the human population. When asked about possible human health consequences of radioactivity during a public meeting last April, the NRC replied that this was outside the scope of its review.

The stakes riding on Calvert Cliffs' fate demand that the scope of this review be widened. Before a renewal decision can be made, the NRC should conduct a human health study for Calvert Cliffs, and must clearly define criteria for safety at the plant. Without objective safety standards, the 30 months the agency plans to spend reviewing the Calvert Cliffs renewal will amount to little more than guesswork. ▣

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The official registration and financial information for Three Mile Island Alert may be obtained from the PA Department of State by calling toll free, within PA, 1-800-732-0999. Registration does not imply endorsement.

(Continued from "Tax Assessment," page 7)
Sklaroff.

"Nuclear generating facilities sell in the market at a negative price," Sklaroff said. He said PECO's market experts calculate that if Limerick sold for $300-million, PECO would have to pay the buyer a far larger sum for its future decommissioning, which leaves the property with a negative value -- an approach not dismissed by real estate professionals.

The school district's attorney, Wendy Rothstein, rejected the PECO lawyers' negative value argument. "They have a trust fund put aside that can only be used for decommissioning, so how can PECO argue they have to pay out of their own pockets?" Rothstein said. The county included improvements PECO made to the plant and training center buildings on the 300-acre property in its assessment calculations.

PECO made a similar appeal Dec. 1 to the York County Board of Assessments, which assessed Peach Bottom at $300-million. During the county's assessment review this summer, PECO again declared the property had a negative value. PECO has taken its appeal to the county's Court of Common Pleas, Sklaroff said.

GPU Nuclear made a similar appeal to Dauphin County's Common Pleas Court after the county's Board of Assessment Appeals, in a Nov. 2 decision, refused to reduce its original estimate of approximately $50-million for TMI-1. GPU calculates the value should be no more than $10-million, said TMI spokesman Tom Kauffman.

FirstEnergy, which is taking full ownership of Beaver Valley -1 and -2 by acquiring Duquesne Light Co.'s shares, this summer filed with Beaver County Appeals Court against the county's $65-million property value assessment and gave its own estimate, which is under $2-million, said First Energy spokesman Todd Schneider. ▣

TMI Alert

TMIA
315 Peffer Street
Harrisburg PA 17102

Inside:
April 4 Public Hearing in York on PECO Energy's Unicom Plan — details on p.3

printed on recycled paper

August 2000

Three Mile Island Alert

The Newsletter of Three Mile Island Alert August 2000

Supreme Court Refuses to Hear TMI Appeal; Remaining Plaintiffs Will Get Day in Court

from a June 12, 2000, Pennsylvania Law Weekly article

The U.S. Supreme Court last week refused to hear from the Three Mile Island nuclear plant's owners sued by nearly 2,000 people who say their health problems stem from the nation's worst nuclear accident. The court, without comment, in General Public Utilities v. Abrams and Dolan v. General Public Utilities rejected an appeal in which the plant owners argued that all the lawsuits should be thrown out because a trial judge ruled against 10 people whose claims were designated as a "test" case. The justices also turned down a separate appeal by those 10 people, who said the judge wrongly barred most of the expert testimony offered to support their claims. During the accident at the Three Mile Island plant near Harrisburg in 1979, a combination of mechanical and human failures allowed the reactor core to lose cooling water and partially melt. Some radioactive gases were released. Almost 2,000 people sued the plant's owners, saying exposure to radiation caused health problems such as cancer and birth defects. The cases were filed separately, not as a class action, but for administrative reasons were handled jointly by a federal judge. Ten cases were chosen to be tried first as a "test case" that might predict the outcome of the other cases and lead to possible settlements. U.S. District Chief Judge Sylvia H. Rambo held a pretrial hearing and determined that most of the scientific expert testimony offered by those who sued was not reliable enough to be admitted as trial evidence.

As a result, Rambo ruled in 1996 that there was insufficient evidence to link the residents' health prob-

(Continued on page 6, column 3)

Chernobyl Plant to Close Dec. 15

from a June 6, 2000, Los Angeles Times article

Fourteen years after the world's worst nuclear accident sent plumes of radioactivity and shivers of fear across Europe, Ukraine announced Monday that it will close the entire Chernobyl nuclear plant in December.

President Leonid D. Kuchma disclosed the plans to shut the facility, responsible for the deaths of at least 31 people and the poisoning of vast acres of farmland, with President Clinton at his side. Clinton pledged $78 million to help pay for the reconstruction of a faulty concrete-and-steel structure that envelops the ruined reactor No. 4 at Chernobyl.

Clinton said the United States also will provide $2 million to improve safety at Ukraine's other nuclear power plants, from which the nation gets 40% of its electricity. All told,

(Continued on top of page 7)

inside...

Three Mile Island Alert

Three Mile Island Alert (TMIA) is a non-profit citizens' organization dedicated to the promotion of safe-energy alternatives to nuclear power, especially to the Three Mile Island nuclear plant.

Formed in 1977 after the construction and licensing of TMI Unit-1 and the construction of the infamous Unit-2, TMIA is the largest and oldest safe-energy group in central Pennsylvania.

TMIA members interested in specific aspects of nuclear power are encouraged to join one of TMIA's committees. These committees include:

- Radiation Monitoring
- Low-level Radioactive Waste
- Health Effects of TMI
- Nuclear Plant Security

Three Mile Island Alert
315 Peffer Street
Harrisburg, PA 17102
Phone: (717) 233-7897
FAX: (717) 233-3261

On the Internet at:

WWW: http://www.tmia.com
&
Email: tmia@pipeline.com

Utility Improperly Fires Whistleblowing Manager

from a Winter 2000, Third Opinion (Haymarket, Australia) article

The US Department of Labor has found that Pacific Gas and Electric (PG&E) maneuvered to have psychiatrists find "paranoid delusions" in a veteran manager because he complained publicly about safety problems and management inaction at the Diablo Canyon nuclear power plant in California.

Neil J. Aiken, now 54 and unemployed, a shift foreman from 1983 until he received the diagnosis in 1998, recently reached a settlement with PG&E that included early retirement. Four plant operators and managers said they believed Aiken was mentally sound and was fired because he embarrassed top executives.

For years Aiken complained about problems at Diablo, where he'd worked since the plant was completed. In April 1998, he aired his concerns at a shareholders' meeting. Soon after, PG&E legally sent him to two psychiatrists, who declared him a security threat, and the company promptly revoked his security clearance. Late last year, PG&E fired him.

But the Labor Department, which enforces laws against harassment of whistleblowers, suggested the real problem was that Aiken had publicly embarrassed his superiors. Notes by one psychiatrist show that his discussions with PG&E executives before he interviewed Aiken were "more about how to remove Mr. Aiken from his position than to make a fair, unbiased evaluation of [his] mental state." §

A Little Dose Will Do It

from a May 18, 2000, Irish Times article

Parental exposure to radiation can cause genetic mutations in the next generation, enough to cause diseases such as cancer, according to new research by scientists at the University of Leicester in Britain and Russia's Vavilov Institute of General Genetics.

The study supports earlier findings by Drs. Carmel Mothersill and Colin Seymour of the Radiation and Environmental Science Centre at Dublin's Institute of Technology. Dr. Mothersill, who heads the centre, has been studying "genomic instability" caused by radiation and other stresses since 1982.

She's found that radiation-induced instability occurred at any radiation dose, even at the low doses used in diagnostic x-rays. "Nobody understands why or what mechanism could explain it. It is always the offspring of a father that has been exposed."

Radiation, chemicals, and heavy metals have all been shown to induce transgenerational genomic instability, she said.

When the genetic material in offspring becomes unstable, mutations can occur that either kill off the cell line or induce illnesses such as cancer. Dr. Mothersill believes many disorders could be attributed to chemical or radiation-induced genomic instability, including neurodegenerative disorders such as Alzheimer's and Parkinson's. §

California Utility Commission Declines to Cap Electric Rates in San Diego

from an August 4, 2000, Contra Costa Times article

California's top utility regulators on August 3 refused to put a lid on soaring electricity prices in San Diego, prompting consumer advocates and angered leaders of the Southern California city to walk out of a packed hearing.

Despite criticism at the Public Utilities Commission's refusal to cap prices in a city where businesses are closing and prices are going up for everything from hotel rooms to Big Macs, the commission did authorize refund credits that will be worth about $35 over the next two months for the average household.

The commission also ordered its own inquiry into high prices that have hit customers of San Diego Gas & Electric, the first utility in the state to lift rate freezes that were put in place when California began deregulating the electric industry in 1998.

"We pretty much agree that this is not what anyone wanted (out of electricity deregulation)," said PUC spokeswoman Kyle DeVine. "But there's only so much we can do within the law."

Mindy Spatt, spokeswoman for the consumer group "Utility Reform Network," called for a "re- regulation" of the power industry, a move that many believe would be impossible at this point. She also said that if nothing is done, high electricity prices will come to the Bay Area. "The governor and the legislature need to address this now, before it hits the rest of the state," Spatt said.

The PUC's action was the latest in a rapid-fire series of measures taken this week to address the state's energy woes. Other steps include:

-- President Clinton on Thursday ordered electricity usage to be scaled back by 5 percent in federal buildings in the state, and he ordered federal power marketers to maximize energy availability in the state.

-- California Attorney General Bill Lockyer and the Federal Energy Regulatory Commission each revealed this week that they were investigating fluctuations in the power market.

-- The state Senate's Energy, Utilities and Communication committee said it has scheduled a hearing next Thursday to discuss what has happened in San Diego and how electricity deregulation is working;

-- The heads of the PUC and Electricity Oversight Board issued a scathing report on the state of California's deregulation, and the governor responded by requesting an investigation from Lockyer, ordering regulators to speed applications for new power plants and ordered that state buildings cut their power use;

-- The state's grid operator, the California Independent System Operator, capped the amount it would pay for wholesale electricity.

The Public Utility Commission's action was not enough for residents and civic leaders in San Diego, many of whom traveled to San Francisco to plead their case for caps on electric bills that have doubled and tripled this summer.

"I've never seen such a diverse group of San Diego leaders united against a common enemy," said Michael Shames of the San Diego consumers group Utility Consumers Action Network.

Commissioner Henry M. Duque defended the commission's refusal to give San Diegans what they wanted.

"Price caps and rate freezes just delay solving the problem," he said. "Somebody is going to have to pay for it in the long run, and it's going to come back to the consumer." §

Idaho Officials Prepare for Possible Wildfires at Department of Energy Site

from a July 16, 2000, Post Register article

First, there was Los Alamos, where a prescribed burn got loose, scorched 30 percent of the laboratory's land and destroyed historic buildings where the first atomic bomb was built.

Three weeks later, Hanford burned. A car wreck sparked a blaze that swept across one of the most contaminated sites in the country, although officials say only minuscule amounts of radiation were released.

Now that fire danger on the Idaho desert has moved into the extreme category, firefighters at the INEEL are waiting for the inevitable. A major wildland fire at the site this summer is considered highly probable.

"We know it's going to happen, whether it's the public or a lightning strike," said Rod Taft, deputy director of infrastructure management for the Department of Energy in Idaho. "The DOE didn't need the disaster at Los Alamos or Hanford to tell us we need to be prepared. We've been prepared for many years."

There have been 42 range fires at the INEEL in the last six years. They've been started by lightning, blown rubber tires rolling into dry sagebrush and one driver who set oil rags in the back of his truck on fire with a cigarette.

One of the closest calls came in 1995, when a fire came within 100 feet of a building at Argonne National Laboratory. Air tankers dropped fire retardant directly on the roof, and ground crews were able to turn the fire 90 degrees around the building's perimeter.

"You don't always know how quickly you're going to get it stopped, but I've never been concerned for a facility," Whittaker said.

Radioactive waste and steel tanks buried deep underground are generally protected, because even a raging fire only heats up the soil to a depth of a few inches, Taft said.

There is some risk posed by historic surface contamination, such as soil polluted with cesium or strontium from explosions or drainage ponds. Plants can take up those elements and release radioactivity when they're burned.

Crews with portable air monitors that measure radiation are also sent out into the field when a wildfire breaks out, mostly to protect people working on the fire.

"The concern would be the firefighters," he said. "We know where (the contamination) is and we don't put them downwind."

Although the site didn't need the Hanford, Wash., and Los Alamos, N.M., fires to remind it to get its firefighters in high gear, there have been a few lessons learned, Taft said.

At Los Alamos, five different federal and state agencies told the public no unnatural radiation had been released, but they wouldn't release monitoring data right away. That caused considerable skepticism on whether they were telling the truth.

"We'll give real-time data," Taft said. "If we're telling the public that the site is not releasing anything, we need to have the data to back that up."

Another involves conditions under which prescribed burns are set, which are receiving national scrutiny in the wake of the Cerro Grand fire at Los Alamos.

The INEEL sets small prescribed burns, typically about 10 acres. That's a fraction of the acreage that the public land management agencies usually plan to burn.

The site set its first controlled burn in 1996, torching nine acres near a gun range where the possibility of a fire breaking out was high. It took nine months to get approvals from 30 different groups -- including archeologists, senior management and the Shoshone Bannock tribes, said Bruce Kamirie, a fire protection engineer for the INEEL.

The site has tightly controlled conditions under which setting fires is allowed, he said. This summer, with the hot, dry weather, none are planned. §

Study Shows Strong Link Between Radon Levels in Home, Lung Cancer

from a May 25, 2000, Lancaster New Era (Lancaster, Pa.) article

A major new radon study authored by a former Lancaster scientist finds that people living in homes with radon gas run a significant risk of getting lung cancer.

The Iowa Radon Lung Cancer Study found that women living for at least 20 years in homes with radon levels of 4 picoCuries per liter -- the lowest level the federal government considers dangerous -- had a 50 percent increased risk of getting cancer.

That finding is significant locally as the U.S. Environmental Protection Agency estimates well over half the homes in Lancaster County have radon levels of at least 4 picoCuries.

And the risk of lung cancer goes up as levels of the invisible, odorless naturally occurring radioactive gas increase in the home, says Dr. R. William Field, the study's author and one of its researchers at the University of Iowa College of Public Health.

"While Iowa has the highest average radon concentrations in the United States, the highest regional radon concentrations in the United States are found in the region composed of Lancaster, York, Lebanon, Cumberland, Dauphin and Perry counties," noted Field, a 1972 McCaskey High School graduate and holder of two degrees from Millersville University.

"Pennsylvania likely has the highest population risk from elevated radon exposure," he said.

Radon kills an estimated 15,000 to 22,000 people each year, according to the National Academy of Sciences.

In a five-year study funded by the National Institute of Environmental Health Sciences, researchers from Iowa University, St. John's University in Minnesota and the University of Kansas studied 413 Iowa women newly diagnosed with lung cancer.

Another 614 women without lung cancer were also studied as a "control" group. Women were studied because historically they tend to spend more time in the home and because they were less likely to be exposed to other possible causes of lung cancer in the workplace.

The researchers corrected for the impact of smoking -- the leading cause of lung cancer -- and took into consideration such factors as how much time was spent in the home and radon levels inside and outside the homes.

The scientists then calculated actual detailed exposure estimates for each woman.

"What this indicates is that residential radon exposure is a significant cause of lung cancer," said Charles Lynch, a University of Iowa professor of epidemiology and the study's principal investigator.

Field called the study the most detailed yet into the risks of radon exposure in the home.

"Our research provides direct evidence that residential radon exposure is tied to an increase risk for lung cancer," he said.

Radon levels in basements were considerably higher than in normal living areas of homes, the study noted.

The study, published in the June issue of the American Journal of Epidemiology, comes on the heels of a radon study last year that suggested that lower levels of radon in homes -- including the 4 picoCurie "action" level used by EPA -- were harmless.

That study, performed by a team of Columbia University researchers for the National Institutes for Health, found that even at levels of 10 picoCuries, cancer-causing radon alpha particles are unlikely to strike residents of a home during their lifetime.

The scientists criticized the way EPA assessed radon danger because it is based on exposures to underground uranium mines in the 1950s and 1960s. Extrapolating the risk of exposures of low levels of radon from the high levels of radon in uranium mines is flawed, the researchers said.

(Continued on page 6)

(Continued from "Radon Study," page 5)
But the EPA said at the time that the preponderance of studies to date show that radon, even at lower levels, is dangerous. The agency did not alter its policy that homeowners with radon levels of 4 picoCuries or more should take steps to lower the gas.

The Iowa study has already brought some quick endorsements.

EPA said the study "adds to the body of knowledge which designates residential radon as the second leading cause of lung cancer."

Kristy Miller, an EPA spokeswoman, said the Iowa study confirms the position held by the agency, the Center for Disease Control and the U.S. Surgeon General that all homes should be tested for radon and that homes with more than 4 picoCuries should be fixed.

The study is "a major milestone for confirming lung cancer incidence due to radon exposures," said Raymond Johnson, president of the Health Physics Society.

Field spent Wednesday doing interviews with reporters from as far away as France and Great Britain, which also have radon problems.

Radon is produced by a breakdown of radium in soil, rock, and water.

The national concern for exposures to humans in homes stems from an incident in 1984 in which a construction worker set off radiation monitors on entering the Limerick nuclear power plant, north of Philadelphia. An investigation found the air inside the man's home filled with extraordinarily high levels of radon gas. Since then, radon has been detected in all 67 counties in Pennsylvania. The state has sought to get residents to test their homes. Schools and public buildings have been tested statewide.

For more information about radon, the state Department of Environmental Protection has a tollfree phone line at 1-800-237-2366. A radon website can be accessed at www.dep.state.pa.us. Choose subject, then radiation protection, then radon. §

(Continued from "Supreme Court," page 1)
lems to the radiation that leaked from the plant. She dismissed all of the nearly 2,000 cases. Last November, the 3rd U.S. Circuit Court of Appeals upheld her ruling on the expert testimony and the dismissal of the 10 cases. But the appeals court revived the rest of the lawsuits, citing those individuals' constitutional right to have their cases heard by a jury. The plant owners' Supreme Court appeal said the decision to throw out all of the cases was proper under trial judges' traditional authority to dismiss meritless claims. But the plaintiffs' lawyers said the plant owners had agreed that the outcome of the first 10 cases would not be binding on the other claims. In the other appeal acted on last week, the 10 plaintiffs' lawyers said the hearing on expert testimony was too extensive and intruded on their right to have the facts decided by a jury. The plant's owners said the judge properly performed her "gatekeeping role" to ensure expert testimony would be reliable. §

US Planned to Nuke Moon

from a May 14, 2000, The Guardian article

The US Air Force developed a top-secret plan to detonate a nuclear bomb on the moon as a display of military might at the height of the Cold War, according to Dr. Leonard Reiffel, 73, the physicist who fronted the project in the late 1950s at the US military-backed Armour Research Foundation.

"It was clear [that] the main aim of the proposed detonation was a PR exercise and a show of one-upmanship. The Air Force wanted a mushroom cloud so large it would be visible on earth," he said. "The explosion would obviously be best on the dark side of the moon and the theory was that if the bomb exploded on the edge of the moon, the mushroom cloud would be illuminated by the sun.

"I made it clear at the time there would be a huge cost to science of destroying a pristine lunar environment, but the US Air Force was mainly concerned about how the nuclear explosion would play on earth," he added. §

(Continued from "Chernobyl," page 1)
a Clinton administration official said, the United States has committed itself over five years to spending about $300 million toward costs linked to the disaster.

While the plant's closing had been expected, the precise date, Dec. 15, had not been announced. The administration hopes that the announcement will make it easier to collect pledges of international support at a meeting in Berlin in July.

The tragedy at Chernobyl, about 80 miles north of Kiev, began April 26, 1986. Reactor No. 4 exploded, spewing 200 times as much radiation as the atomic bombs that were dropped on Hiroshima and Nagasaki at the end of World War II. Estimates of the number of people who have died in the past 14 years as a result of the accident vary widely. Thousands are thought to be suffering from radiation-related illnesses.

An 18-mile exclusionary zone was established, forcing 135,000 people to abandon their homes, farms, and villages. A 24-story sarcophagus, now badly cracked and leaking, was constructed to seal off the 200 tons of radioactive gunk--melted fuel, sand, concrete, and debris from the explosion and fire. And now at least $750 million needs to be spent for a new containment system.

Radiation hot spots are still turning up. Thyroid cancers among children who lived downwind of the plant are increasing. And, coming seven years after the less-serious nuclear accident at Three Mile Island in Pennsylvania, the Chernobyl accident raised grave doubts among the public about the safety of nuclear power.

The White House touted the Chernobyl announcement as "a major milestone" for Ukraine and also for the United States and the leading industrial democracies, which have pressured Ukraine to close the facility.

It said the United States would pay to help jump-start businesses in the town of Slavutych, a community near Chernobyl, to help it overcome the impact that the plant's closure will have on local workers, among them scientists and engineers who will lose their jobs. And the United States will work with Ukraine and the industrial democracies to gather funds to build the second sarcophagus. §

New Study Assesses Impact of Radiation on Nuclear Workers

from a June, 2000, Nuclear News article

A new study led by Steve Wing, associate professor at the University of North Carolina at Chapel Hill (UNC-CH), was made public on April 7, claiming that exposure to ionizing radiation can increase a nuclear worker's risk of multiple myeloma, especially among people exposed later in life. The report was sponsored by the National Institute for Occupational Safety and Health and was published in the April issue of the Annals of Epidemiology.

Multiple myeloma is a rare but often fatal cancer of the blood-forming tissues, according to UNC-CH. The researchers looked at radiation exposures and other critical information about employees hired before 1979 at the Department of Energy's Hanford Site, Los Alamos National Laboratory, Oak Ridge National Laboratory, and the Savannah River Site, and then obtained their health records. According to UNC-CH, the study concluded that older workers with cumulative radiation doses of 5 rem or more were almost three-and-a-half times more likely to die from the cancer than workers at the plants with cumulative exposures of less than 1 rem.

The research conclusions do not mean "that it is safe for young workers to be exposed to radiation," claimed Wing. "Exposures during the child-bearing ages might lead to genetic mutations that could affect children and future generations." [Ed.note: *See* A Little Dose Will Do It, page 2.]

The study subjects were 98 workers who died of multiple myeloma, and 391 similarly aged controls. Investigators also reportedly attempted to determine if exposure to solvents, metals, welding fumes, asbestos, or other agents could increase the risks of multiple myeloma, but could not obtain adequate records on those substances, said Wing. §

NC State University Weighs Nuclear Program's Merit

from a April 19, 2000, The News and Observer (Raleigh, NC) article

Shining up through 26 feet of absolutely pure water, the polar-blue glow at the heart of N.C. State University's vintage nuclear reactor is a mesmerizing sight.

NCSU cranked up the nation's very first reactor used for teaching and research in 1953. The current model dates from 1972, but it still uses 1950s-style technology adorned with buttons, knobs and needle gauges.

Nuclear engineering was a booming field here and on other campuses for more than 30 years. But that blue glow has lost its appeal, and students are flocking to other fields. Now, NCSU's highly-regarded nuclear engineering department is struggling to stay alive.

The university is looking for partnerships with industry, educating students and teachers to the many applications of atom-splitting, and banding with other research institutions to keep a flagging field from disappearing entirely.

Undergraduate enrollment in nuclear engineering programs across the country dropped from 1,850 students in 1992 to 527 in 1998. NCSU's numbers peaked at 183 undergrads in 1985, the year before the nuclear power plant disaster in Chernobyl. The count sagged to 48 students by 1997.

Still, operating the program costs about $4 million a year, including $500,000 for the reactor alone. After outside funding sources are counted, the university's share of the bill is $1.8 million.

Some NCSU trustees suggested at a recent board meeting that it might be time to shut down the department, decommission the reactor and redirect its budget to hotter fields. Provost Kermit Hall argued against the idea.

"It costs more to close the reactor and let staff go than to keep it going," Hall said.

Haydn Wadley, associate dean for research at the University of Virginia School of Engineering, chuckles over that logic. Virginia held on to that position, for a while.

"The longer we waited, the worse it was going to be," Wadley said. "As you looked into the future, you saw decommissioning costs for the reactor going sky high. On the other side, you saw plummeting interest on the part of students. So the decision was pretty straightforward."

Virginia shut down its reactor three years ago and is beginning to dismantle it. Wadley says the cost will be several million dollars.

Georgia Tech, Iowa State and other universities also have closed their nuclear engineering programs in the past few years. Today there are only 29 university reactors, compared with more than 70 two decades ago.

While the 1990s are going down as the dark decade for nuclear, many say the job market is looking brighter today. That's because nuclear industry employees are starting to reach retirement age.

And deregulation of the power industry has strengthened the market for nuclear power, as utilities seek to buy poorly performing plants and turn them around. On the other hand, the nuclear industry still hasn't found a place to dispose of spent fuel rods and other radioactive waste, as targeted communities have fought those planned facilities. With many of the nation's 103 nuclear power plants due for phasing out in another 15 years, one of the chief job opportunities for nuclear engineers may shrink further.

At a recent open house for NCSU's College of Engineering, several students said they were considering nuclear engineering, but other prospective engineering students turn up their noses.

"I prefer civil or mechanical engineering and working with stuff you can actually see," said Ryan Newland, a high school junior from Union County. "It's easier to understand, it's easier to work with and it's much less dangerous." §

British Energy Cuts Annual Dividend by 50 Percent

from a July, 2000, Nuclear News article

[Ed. note: AmerGen, which owns and operates TMI-1, is a joint venture of British Energy and PECO Energy.]

British Energy, the United Kingdom's main nuclear generator, slashed its annual dividend by 50 percent to $0.12 following a 19 percent drop in pre-tax profit, from $456 million to $370 million for the year ending March 31, 2000, and warned it may go into loss this financial year. To counter the large drop in share price, which lost 21.5 percent on the day the results came out, the company is planning further cost-cutting measures.

To explain the poor results, Chairman Sir John Robb said that "although we achieved significant reductions in operating costs, these were not enough to offset the impact of lower revenues due to two major unplanned power station outages and selling price reductions."

The lower output was principally due to unplanned outages at its Heysham-2 and Dungeness B AGR stations. The turbine failures in both units at Heysham-2, caused by defects in equipment supplied during outages, were responsible for a loss of 3.4 TWh in output. Both units are now fully operational. At Dungeness B, boiler steam pipe weld defects originating during fabrication over 30 years ago were identified in one boiler and resulted in extended outages to both units for inspection and repairs.

On the plus side, BE managed considerable cost reductions during the year, including savings of $43 million through improved fuel efficiency and of $55 million from a decrease in the cost of materials and services, despite extra engineering work at Dungeness B and Heysham-2. Staff costs were down $9 million due to a reduction of 3 percent in head count.

While nuclear plants remain vulnerable to costly unplanned outages, BE is also having to deal with the changing electricity market as it continues to transform to a fully liberalized one. Against a background of over-capacity of some 20 percent, the pressure on prices from increasing competition has been exacerbated by uncertainties ahead of the introduction of new electricity trading arrangements later this year. This is already reflected in the prices BE is getting for its contract sales, which are 15 percent below that of last year.

Although BE is on track to cut operating costs by 20 percent over three years, that might not be enough to avoid a loss this year if power prices have a particularly profound effect on BE, which has little room for maneuver; it cannot switch off its nuclear capacity and has to accept whatever price is fixed by the present pool system.

Besides improving plant performance, BE plans to reduce nonoperational overheads by $38 million per year and eliminate 250 jobs with full effect from April 2001. The company has also started discussions with British Nuclear Fuels to renegotiate reprocessing and fuel handling contracts currently costing over $460 million per year in cash terms.

BE has been trying to diversify away from nuclear generation, having recently bought an energy supply business in Wales and a coal-fired power station. Because of the present financial position, Chief Executive Peter Hollins admitted that "some plans may have to be scaled back a bit." He added, however, that there was no reason for BE to trim investments in the United States. The company has been buying U.S. nuclear plants via its joint venture, AmerGen, with Philadelphia-based PECO Energy. Last year, AmerGen acquired two reactors, Clinton and Three Mile Island-1, and is awaiting final regulatory approval for two more: Vermont Yankee and Oyster Creek in New Jersey.

BE expects each of these stations to provide some $15.3 million per year. AmerGen is developing other prospects including a revised bid for Nine Mile Point-1 and -2, for which a public auction is now expected to be held in September.

BE also is looking at the Canadian market and is expected to make a bid for Ontario Power Generation's Bruce plants. It hopes a decision will be made during the summer. §

More Nuclear Plants Could Be on Georgia's Horizon

from a May 30, 2000, The Florida Times-Union (Jacksonville, FL) article

Since 1979's Three Mile Island accident, Georgia Power Co. hasn't considered building another nuclear plant. That could change soon.

With just two nuclear plants in its system, Georgia Power depends on aging coal-fired power plants, increasingly the targets of state and federal environmental agencies. The utility is switching to less-polluting natural gas as fast as it can. But it expects demand to skyrocket in the next two decades, making gas too costly to use for power generation. That leaves little time to find a new source of electricity for a growing state.

One good possibility, Georgia Power says, is new nuclear technology. The Nuclear Regulatory Commission recently approved two designs for reactors that are smaller, cheaper, and less complicated than today's models. Regulators say they also would be safer, with fewer mechanisms that could malfunction. Several other countries already have such reactors.

The company hopes to keep running its existing nuclear plants for decades. It has requested a 20-year license renewal for its Edwin I. Hatch nuclear plant in Appling County, and soon will do so for Vogtle Electric Generating Plant near Waynesboro. But those plants supply less than a fourth of Georgia Power's electricity -- a lower percentage than in most nearby states -- and that number will fall as the state grows.

With coal dependence lessening and gas a short-term solution, Long says, Georgia Power might be one of the first U.S. utilities to consider using the new reactors.

This worries environmental groups like Campaign for a Prosperous Georgia. They acknowledge that nuclear plants don't create air pollution like coal. But nuclear power presents other potential problems. "The nuclear industry has made a big push to the public, leading them to believe it's environmentally friendly, but it's very far from it," says Rita Kilpatrick, president of Campaign for a Prosperous Georgia. "There's nothing clean about nuclear waste."

The possibility of more nuclear plants has drawn little attention across Middle Georgia. "It comes as a surprise to me that they're contemplating nuclear power," says state Rep. Robert Reichert, D-Bibb. "I thought the cost of the last one built was so large that Georgia Power decided that was it."

But Reichert says he doubts the new technology would prompt much public opposition. "Sure, most folks are going to say they're concerned about nuclear power, but most folks are not willing to do anything about it. They want their air-conditioner on and the lights on when they flip the switch."

Southern Co., which owns Georgia Power, estimates its customers' demand for electricity will grow 2.5 percent a year for the next decade. That's about 600 megawatts a year, about the output of one of the new nuclear reactors. Georgia Power will account for two-thirds of that increase.

Coal is abundant and cheap, making it an efficient source of power. But burning coal releases nitrogen oxide, sulfur dioxide and carbon dioxide. These can cause health problems, especially in children, the elderly and people with respiratory or immune-deficiency disorders.

The state's Department of Natural Resources board will vote on an ozone-reduction plan for metro-Atlanta this summer, including emission-reduction devices at seven Georgia Power plants. Compliance will cost $836 million, Georgia Power officials say.

Georgia Power will have to find cheaper sources of electricity. The short-term solution is natural gas.

Gas generally is a more expensive fuel than coal. But it produces far less pollution. Gas emissions contain no sulfur and about half the nitrogen.

Gas does emit carbon dioxide, which many scientists say contributes to global warming. But gas produces less carbon dioxide than coal.

Natural gas isn't worry-free for utilities. Now, gas consumption peaks in winter, the heating season. If gas also becomes a major power source for air conditioning, demand will be high year-round. Economics, not environmental issues, will keep gas a short-term solution. Once prices rise to a certain level, other technologies will be cheaper to use.

Whenever that happens, the new nuclear reactors will be waiting in the wings. §

Lack of Sleep Contributed to Nuclear Disasters

from a July 9, 2000, The Observer article

Lack of sleep among managers of nuclear power stations and hospital doctors leaves them unable to cope with emergencies and prevent them becoming disasters. Sleep deprivation leads people to reach bad decisions and then stick with them even when they are clearly wrong, according to a study by Britain's top sleep researcher.

The report - *The Impact of Sleep Deprivation on Decision Making* - claims tired people are far less capable of handling the unexpected than was thought. It blames sleeplessness and long shifts nuclear disasters from Chernobyl to Three Mile Island, as well as the explosion of the space shuttle Challenger.

The finding has far-reaching implications for junior doctors who have to take life or death decisions during their long hours. The Department of Health has relied on earlier research, which suggested they could cope well.

The new report, by Jim Horne of Loughborough University's Sleep Research Laboratory and Yvonne Harrison of Liverpool's John Moores University, suggests tired people can do routine, sometimes complex tasks, but not deal with the unexpected.

It blames sleep deprivation for the disasters or near disasters in nuclear power plants such as Chernobyl, Three Mile Island, Davis-Beese in Ohio and Rancho Seco in California. All occurred in the early morning after unexpected problems.

The scientists' message for tired decision makers involved in crises is: go to bed before your judgment goes. §

Hot Off the Press — The Woman Who Knew Too Much

A summary of a recent book that Our Readers might appreciate

Dr. Alice Stewart is a British epidemiologist who revolutionized the concept of radiation risk. Born in 1906, she is an outstanding scientist with more than 400 peer-reviewed papers to her name and someone who has taken courageous and effective stands on public issues. Yet her controversial work lies at the center of a political storm and so has only relatively recently begun to receive significant attention.

For more than forty years, Stewart has warned that low-dose radiation is more dangerous than has been acknowledged. While teaching at Oxford in the 1950s she began research that led to the discovery that fetal x-rays double the child's risk of developing cancer. As a result, doctors no longer x-ray pregnant women. Two decades later -- when she was in her seventies -- she again astounded the scientific world with a study showing that the U.S. nuclear weapons industry is about twenty times more dangerous than safety regulations permit. The finding put her at the center of the international controversy over radiation risk. In recent years, she has become one of a handful of independent scientists whose work is a lodestone to the anti-nuclear movement. In 1990, the New York Times called her "perhaps the Energy Department's most influential and feared scientific critic."

THE WOMAN WHO KNEW TOO MUCH traces Dr. Stewart's life and career from her early childhood in Sheffield to her medical education at Cambridge to her research positions at Oxford and the University of Birmingham. The book joins a growing number of biographies of pioneering women scientists such as Barbara McClintock, Rosalind Franklin, and Lise Meitner and will find a wide range of appreciative readers, including those interested in the history of science and technology and of the history of women in science and medicine. Activists and policy makers will also find the story of Alice Stewart compelling reading.

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