ting process, is purely the invention of the nuclear industry, which has long sought to avoid the costs associated with "backfits"—NRC-mandated safety changes to plant hardware, design or procedures. No real need for the rule has ever been shown by the NRC, and according to comments on the rule submitted by the Union of Concerned Scientists (UCS), "the most striking aspect of the arguments that have been presented in support of 'backfit reform' is the failure by either the industry, the NRC staff, or anyone else, to demonstrate that a single backfit was unnecessary. According to Chairman Palladino's letter of September 29, 1983, to Senator Mitchell, the Commission knows of *no* instances in which unnecessary backfits were imposed." (emphasis in original).

The controversy over backfits has been raging for some time. Fire Protection became an issue following the near-catastrophic fire at Browns Ferry in 1975. Environmental Qualification (the assurance that plant equipment will perform properly in an accident atmosphere) has been an issue at least as long. Meeting requirements in both areas has required numerous modifications which the industry considers as backfits, although many argue that modifications necessary to meet pre-existing standards cannot reasonably be termed "backfits." It should be noted that many plants still don't meet basic Fire Protection and Environmental Qualification requirements, more than a decade after the issues were brought to public attention.

But it was following the 1979 TMI accident, and the development of the TMI Action Plan, which prescribed a number of design and hardware changes—primarily to meet the existing safety standards, that the industry began to feel the pressure of backfit requirements. By 1981, the industry began to attack the backfit concept in earnest, claiming the required modifications were simply too expensive and unnecessary.

Industry lobbyists began pressuring the Commission to adopt a rule restricting backfits. The new Reagan NRC was happy to acquiesce. In 1983, the NRC published a notice of proposed rulemaking announcing its intention to "reform" the backfitting process: Industry comments generally supported the rule, but asserted it didn't go far enough. Other comments disputed the need for the rule and disagreed with the wording. A proposed rule was published in 1984, incorporating many of the industry comments, but still it didn't go far enough for groups like the Atomic Industrial Forum. The final rule, which went into effect last October, resolves nearly every industry concern.

Before a backfit can be authorized, the NRC staff must determine, through a massive, documented analysis, that the change will provide a "substantial increase in the overall protection of the public health and safety or the common defense and security." However, the definition of "substantial" remains vague. As Commissioner Asselstine pointed out, this definition can be critical. At Indian Point, the Commission was urged by the staff and a licensing board to require various safety improvements. "Upon learning that those improvements only cut the risks to the public in half," Asselstine wrote, "the Commission rejected them as not providing a 'substantial' increase in protection."

Contrary to many interpretations of the Atomic Energy Act, the rule requires the preparation of a cost-benefit analysis for every backfit proposal. Even here, the deck is stacked; the only benefit that can be considered is the "potential change in the risk to the public from the accidental off-site release of radioactive material." But costs that may be used include the cost of downtime while repairs are underway, the cost of replacement power, the cost of construction delay and even the cost to the NRC of the backfit. It might seem that the average $100 million so far spent by the average plant on backfits—both TMI and non-TMI related—would be a good investment if it prevented a several billion dollar accident. Apparently the industry and the NRC don't think so. Neither damages to a plant or to land in the area, nor replacement power for a damaged reactor, such as TMI-2, can be considered as a possible benefit in the NRC's cost-benefit equation.

There are other problems with the rule. It requires the use of notoriously unreliable Probabilistic Risk Assessments (PRAs); as written, it appears to apply not only to all future backfits, but also to all future rulemakings of any kind; and finally, it has been interpreted by the Commission as applying only to those changes that would increase safety margins—it doesn't apply to any relaxation of safety requirements.

Wrote Commissioner Asselstine, "The Commission is reluctant . . . to demand improved safety because that might suggest to the public that the existing reactors are unsafe and might hinder the further development of the nuclear industry."

The Union of Concerned Scientists has filed suit to overturn the backfit rule, with oral arguments likely to be heard during the summer.

Environmental Qualification

A clear example of how the NRC consistently has failed to enforce its own regulations, even in the absence of its new backfit rule, is shown in the sorry record of its Environmental Qualification (EQ) regulations. Equipment, including electrical cables, is required to be able to withstand the harsh conditions created in an accident environment to ensure that an accident can be controlled.

Although a rule requiring safety equipment to be environmentally qualified has been on the books since 1971, it wasn't until 1978 that the Commission, in response to a UCS lawsuit, began surveying utilities to determine the status of EQ at each plant. The Commission found that little to no equipment at most plants met the regulations. In the stricter post-TMI atmosphere of 1980, the Commission simultaneously amended every single operating license to add the proviso that all plant equipment must be qualified by June 30, 1982 or be shut down.

The NRC's newly-found resolve lasted until exactly that date: following a year of utility complaining, on June 30, 1982, the Commission issued an immediately effective rule waiving the deadline it had set two years earlier. Less than four months later, in October, 1982, the Commissioners learned from their staff that only 6.6% of the relevant safety equipment could pass EQ tests. The NRC, however, still refused to enforce its rule. A lawsuit brought by UCS on public participation grounds (the "immediately effective" rule did not allow for public comment), forced the NRC to open the process to comment. But at the end of the comment period, in September, 1984, the NRC again voted to revoke its June, 1982 deadline and set a new deadline of March 30, 1985.

Again the deadline faded away, this time until November 30, 1985. Then, the NRC said that any plant that didn't meet EQ standards could apply for another extension of time to meet the requirements. Nine plants were granted extensions: Shoreham, Palo Verde-1 and -2, Connecticut Yankee, Fort St. Vrain, Point Beach, Cook-2, Millstone-1 and Nine Mile Point-1. Three others, Brunswick-2 and Sequoyah-1 and -2, were denied extensions. Thus, fifteen years after the first rule regarding EQ was written, eight years after the NRC first began looking into the matter, and six years after a two-year maximum deadline was imposed, at least

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