could find no common source of exposure. University and hospital officials resisted the conclusion that the victims had been exposed at the hospital, and so the CDC declined to call this a nosocomial epidemic.

There were no outbreaks in 1978 or 1979, but some local officials felt uncomfortable leaving the 1977 puzzle unsolved. Linden Witherell, a U.S. public health officer working as a local agent of the Environmental Protection Agency (EPA), was one of those who thought the trouble was centered in the hospital. He sampled the water around Burlington in 1977, hoping to locate a source of bacteria. These were never analyzed, he says, probably because the laboratory at the CDC had a huge backlog of requests from other areas where outbreaks were still in progress.

In 1978, Witherell read about the Memphis outbreak in which *Legionella* had been traced to the hospital's cooling tower. In that investigation, CDC official George Mallison went to considerable lengths to test his theory that the tower was spreading the bacteria. For example, with the hospital's permission, he put a smoke bomb in the cooling tower at 5 o'clock one morning—so as not to attract attention—and found that the vapor "drift" from the tower actually did move toward the hospital's air intake vents. Other CDC investigators pinned down the source using epidemiological techniques. The tower was sealed off, thoroughly chlorinated according to Mallison's recommendations, then put on a schedule of biocidal treatment. Memphis has had no legionellosis outbreaks since.

Witherell asked Mallison in 1978 whether the CDC laboratories could analyze samples from Burlington's cooling towers, even though no outbreak was in progress. Mallison said they would. Witherell then proposed the idea locally but found no enthusiasm for it in Vermont. He wanted to collect samples in August, when the tower was in peak use. He met no opposition, he says, but certainly no active support either. Local officials brought up technical problems that would have to be solved to make this a "perfect" study. Because of the delay in getting local permission to collect samples, Witherell was not able to collect his samples until the summer was over and some of the cooling towers had been turned off.

The results came back early the next year: of the five towers sampled, only two were found contaminated with *Legionella*. One was on top of a medical building known as the De Goesbriand Unit, and the other was above the medical research laboratory in the Given Building, about 600 feet from the main hospital center. (The Given tower later proved to be the villain.) The state health department put out a press release announcing that both towers would be cleaned according to the CDC method used in Memphis. Fresh samples were taken from both towers in the spring of 1979, before start-up, and the towers were found free of bacteria.

Witherell asked to have the 1977 investigation reopened when he learned that the towers had been contaminated. But the state and CDC decided not to do so on grounds that there was not enough new information to warrant further investigation.

There were sporadic cases of legionellosis in 1978 and 1979, but no serious trouble until May 1980. The sampling and cleaning procedure used in 1979 was not followed in the spring of 1980. An early warning appeared, however. In mid-May, two maintenance men who were working on the cooling tower atop the Given Building were sprayed accidentally with mist from the tower. Both got sick, and one came down with a bad case of Legionnaires' disease. He pulled through only after spending 3 months in the hospital. Other cases of atypical pneumonia appeared in the second half of May, and it was plain that a new legionellosis outbreak had hatched.

New water samples were taken from the towers and, beginning on 6 June, both towers were treated with chlorine. When the laboratory analysis came back, the De Goesbriand system was found to have been clean, and the Given tower, contaminated. Chlorination of the Given tower continued through 26 June. Then, following the CDC method used in Memphis, the tower was put on routine biocidal maintenance. Quaternary ammonia and other chemicals were used to keep the water free of algae. Too much chlorine, it is thought, causes corrosion.

Because this battle with the bacteria was studied in a less than systematic fashion, local officials are not entirely certain what happened. It seems that the outbreak may have tapered off even before the tower was chlorinated. It's not known why. This much is known: there were no cases of Legionnaires' disease in June while the Given tower was being treated with chlorine. When the chlorination stopped, the disease reappeared, as if on cue. In July Burlington had an outbreak far worse than the one in May. Chlorination was resumed on 17 July. The cases dropped off again, sharply. The University of Vermont prudently

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For Future Grants, Ski Trips Are Out

Is it a slap on the wrist or a slug in the nose?

Under provisions of a new regulation, the government could ban future research grants to individuals or their institutions for misuse of funds awarded by the Department of Health and Human Services (HHS.).

Institutions balk at the broad scope of the new rule known as the debarment regulation. "It's overkill to punish the entire institution and the majority of trustworthy researchers for an isolated case," says Estelle Fishbein, general counsel for Johns Hopkins University.

William Metterer, a senior attorney at the National Institutes of Health and principal author of the rule, says "We're not going to debar an institution just because of one bad apple." The rule "is just enough of a stick to have the institutions keep their houses in order."

The regulation arose because of several cases of misappropriation of funds during the past decade. In one of the most recent incidents, a university researcher used grant money for a Colorado ski trip.

Conditions for debarring an individual include conviction for any criminal offense related to the grant, serious unsatisfactory performance, and any other cause that is deemed "of sufficiently serious nature" by the HHS secretary. The institution may be debarred if it knew about the offense or should have known about it. If the institution takes "remedial action," it is less likely to be debarred.

University attorneys maintain that the rule's language is vague and puts too much power in the hands of the HHS secretary. Fishbein says, "It's an invitation for corrupt use of discretionary power by the secretary. It permits the secretary to respond to political influence that seeks to pressure institutions."

The lawyers argue that existing grant application procedures can be used to screen out candidates that have abused research funds.

Metterer says that by keeping these people out of the process, the grant committees can devote more effort to reviewing qualified applicants. Yet he

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says that the debarment rule will rarely be used.

Another part of the rule that worries universities is a provision in which the secretary can immediately suspend funds to an institution or an individual. The provision is "very bothersome," says Lindsey Kiang, general counsel at Yale. He says that suspension, in effect, is the equivalent of debarment, except that it shifts the burden of proof from the secretary to the institution.

Metterer says it would be even more unusual for the department to suspend an individual or institution than to debar them. Then why the rule? Metterer says that it is important that the secretary have this power ready for unpredictable circumstances.

NAS Hopes to Meet Soviets on Arms Control

The National Academy of Sciences has formed an arms control committee which hopes to meet with a similar council established last year by leading Soviet scientists.

The Committee of International Security and Arms Control has already proposed to its Soviet counterpart that the two groups meet. "We've received positive signals from the Soviets, but we're still waiting for a definite reply," said Marvin Goldberger, president of California Institute of Technology and committee chairman.

The idea to form the committee was prompted by several concerns. Since the 1950's, Pugwash conference has provided an international forum for informal scientific discussions of arms control. During the past few years, however, many say that the group has lost momentum. Academy president Philip Handler says fewer scientists who are from the private sector and have influence in government are participating in Pugwash. Pugwash has reduced its attention to arms control, Handler says, because it now is focusing on the problems of developing countries as well.

Pugwash council member Bernard Feld of the Massachusetts Institute of Technology says that the "emphasis of Pugwash remains with arms control. The most dangerous potential nuclear conflicts are with the third world. You have to involve the scientific community in the third world."

The committee plans to hold bilateral discussion with foreign countries. Pugwash has taken a multilateral approach.

Feld says that the committee's bilateral approach is too narrow. "It's one thing to sit down and discuss specifics and another to take a broad view. The two groups will have to work together."

Other problems that gave rise to the committee are the slowdown in SALT talks and the Soviet invasion of Afghanistan, Goldberger said.

DeWitt, Livermore Lab Patch Up over *Progressive*

"I'm immensely relieved" Hugh E. DeWitt said buoyantly.

After 13 months of dispute between DeWitt and his employer, Lawrence Livermore Laboratory, over events related to the *Progressive* magazine

Hugh DeWitt: He's cleared

case, the two parties have reached a settlement. DeWitt, a theoretical physicist, has been fighting disciplinary action taken by the lab for his participation in the case (*Science*, 24 October).

The laboratory contended that DeWitt mishandled possible classified information when he submitted affidavits on behalf of *Progressive* magazine, which was charged with divulging H-bomb secrets. The laboratory then issued a letter of warning to DeWitt and placed it in his personnel file. DeWitt maintained that the letter would harm his career.

In the settlement announced 17 October DeWitt acknowledged that he should have cleared his affidavits with the classification office. In turn, Livermore agreed to remove the warning notice from the scientist's file.

Although DeWitt is happy with his employer's actions, he is still frustrated with the Department of Energy's handling of classified material. "The classification procedures are hopelessly out of date," he said.

The dispute also taught him to "be careful of rules and regulations. It's a lesson in self-preservation. But that's a minor matter," he said.

It's Official: Press Nominated to Head NAS

Frank Press, the science adviser to President Carter, has been formally nominated to be the next president of the National Academy of Sciences, succeeding Philip Handler.

His nomination had been expected (*Science*, 24 October) but was officially approved 26 October by the Academy's council. Traditionally, the council's nominee is almost always elected.

The Academy was concerned that Press's present job would pose problems under the Ethics in Government Act which limits future dealings of senior government officials with agencies they leave. After consulting with private and government lawyers, the Academy concluded that there would be no substantial conflict of interest.

The Academy also asked advisers to Ronald Reagan to check if Press would be acceptable to a Republican Administration. Press was given a nod of approval.

Two candidates for the Academy's vice presidency were also nominated: They are Jacob Bigeleisen, a chemist who is vice president for research at the State University of New York at Stony Brook, and biologist James Ebert, president of the Carnegie Institution of Washington.

Election ballots will be mailed out 15 December and are to be returned 1 month later. The new president takes office 1 July.

Marjorie Sun