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OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 70-820/80-27

Docket No. 70-820

License No. SNM-777

Priority 1

Category UR

Licensee: United Nuclear Corporation  
UNC Recovery Systems  
Wood River Junction, Rhode Island 02894

Facility Name: Fuel Recovery Operation

Investigation at: Wood River Junction, Rhode Island and Vicinity

Investigation conducted: December 3-5, 8-12, 15-19, 1980 and January 12-15, 1981

Investigators: R. E. Shepherd 2-27-81  
R. E. Shepherd, Investigation Specialist date signed  
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Robert T. Carlson, Director  
Enforcement and Investigation Staff

Investigation Summary:

Investigation on December 3-5, 8-12, 15-19, 1980 and January 12-15, 1981  
(Report No. 70-820/80-27)

Areas Investigated: Allegations that the licensee pumped radioactive liquid waste from an evaporation lagoon onto the ground during 1978; that the discharged waste eroded the soil under the security fence such that a person could crawl under it; that UNC personnel deliberately punctured a lagoon liner to cause drainage of the lagoon into the ground and that employees heaved 80-to-90 pound lead weights through the lagoon rain covers.

Results: Interviews with present and former UNC personnel failed to substantiate any of the allegations, but provided information that the licensee pumped rainwater from the lagoon area onto the ground about the same time period that the alleged pumping of lagoon waste occurred. Interviews with several former UNC security personnel provided both conflicting and confirmatory information regarding the lagoon waste-pumping allegation and the resultant soil erosion under the security fence. Interviews with other former UNC security personnel failed to substantiate any of the allegations. The investigation failed to substantiate the allegations that a lagoon liner was deliberately punctured or that employees heaved lead weights through the lagoon rain covers. The NRC's analysis of soil samples taken from the area where the lagoon waste was allegedly discharged onto the ground indicated no lagoon material.

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## I SUMMARY

This investigation was initiated to investigate allegations made by a former UNC security guard that the licensee had pumped radioactive liquid waste from evaporation lagoon "F" onto the ground during 1978 and that the discharged liquid eroded the soil under the security fence and left an opening under the fence large enough for a person to crawl under. Additional allegations, which were publicized in several Rhode Island newspapers, were investigated to determine if UNC personnel had deliberately punctured a lagoon liner to cause drainage of the lagoon into the ground and that employees heaved lead weights through the lagoon rain covers. The investigation included interviews with the aforementioned security guard, other personnel who worked at the UNC facility during 1978 and UNC plant personnel currently employed there. The investigation also included an examination of NRC files and licensee records related to the licensee's evaporation lagoon system and security force activities during 1978. NRC Region I personnel sampled and analyzed the soil at various locations in the general area where the lagoon liquid waste was allegedly discharged onto the ground during 1978. Sample analysis indicated that lagoon material was not present.

Interviews with 16 present and former UNC plant personnel failed to substantiate any of the above allegations but did provide information that the licensee pumped rainwater from the lagoon area onto the ground about the same time period that the pumping of lagoon waste was alleged to have occurred. Interviews with the allexer and three other former UNC security guards provided both conflicting and confirmatory information regarding the lagoon waste pumping operation and the resultant soil erosion under the security fence. Interviews with eight other security personnel failed to substantiate any of the above allegations. The investigation failed to substantiate the allegations that UNC personnel deliberately punctured a lagoon liner to cause drainage into the ground or that employees heaved lead weights through the lagoon rain covers.

## II DETAILS

### A. PURPOSE OF INVESTIGATION

The purpose of this investigation was to investigate allegations that:

1. The licensee pumped radioactive liquid waste from an evaporation lagoon onto the ground during 1978.

2. The pumping of liquid waste onto the ground eroded the soil under the security fence and left an opening large enough for a person to crawl through.
3. UNC personnel deliberately punctured the plastic liner in a lagoon to allow it to drain into the ground.
4. Employees heaved 80-to-90 pound lead weights through the lagoon rain covers.

B. BACKGROUND

On November 24, 1980, Mr William Rodriquez, a reporter for The Chariho Times, a weekly newspaper distributed in Rhode Island, telephonically reported the following information to Region I. He said that two former guards at the United Nuclear Corporation (UNC) facility in Wood River Junction, Rhode Island, told him that the licensee had pumped liquid from a lagoon out under a security fence in October 1978 and thereby eroded the soil under the fence. He said that the guards also claimed that a lagoon liner was purposely punctured by UNC personnel to provide faster drainage of the lagoon and that the guards had previously reported the above information to the NRC during an investigation conducted at the licensee's facility during 1978.

The Chariho Times, dated November 26, 1980, contains an article (Exhibit 1) under the by-line of Bill Rodriquez and states in part, as follows:

"Charlestown - The United Nuclear Corp. uranium scrap recovery operation here was regularly pumping liquid waste from an evaporation lagoon out onto the open ground during 1978, two former UNC employees have told The Chariho Times..."

"...Reportedly, the pumping continued periodically for months, eroding a gully under the fence around the plant, a passage large enough to lead to a citation by the NRC for a security violation...."

"The two former employees, in independent interviews, said that they gave information about the pumping and related matters to NRC investigators who in the fall of 1978 were looking into reports of falsified security records, an investigation that resulted in the massive dismissal of guards at the facility."

"They also reported to the NRC that one of the plastic-lined lagoons had been deliberately pierced along its bottom to allow it to drain, since the evaporation process was not effective, they said. And one spoke of employees competing to see who could heave 80-to-90 pound lead weights the farthest through lagoon rain covers..."

"...The former employees, who insisted that they not be identified, both said that the pumping of the lagoon liquid onto the ground was common knowledge around the plant."

"'The pumping, everybody knew it. I saw it,' one said, estimating that one lagoon's level was lowered five feet by this process..."

"'They'd drag them up between the lagoons, put a fire hose in and run another fire hose off the other end of the pump and out under the fence,' the other man stated. 'It was eroding under the fence really bad. You could practically walk out under the fence...'"

On November 26, 1980, Individual A, whose identity is being withheld upon request, telephonically contacted Region I and said that he had spoken with Mr. Rodriguez and had information concerning the alleged pumping of lagoon waste onto the ground and the erosion of soil under the security fence. On December 1, 1980, Individual A telephonically contacted Region I regarding the above allegations and arrangements were made to interview him regarding this matter.

The Providence Journal, a newspaper distributed in Rhode Island, dated November 26, 1980, contains an article (Exhibit 2) which states, in part, as follows:

"...Radioactive wastewater from holding lagoons at United Nuclear Corp.'s uranium reclamation plant here was routinely pumped out onto the ground in 1978 when the lagoons threatened to spill over, a former guard at the facility said yesterday.

"The worker, who asked to remain unidentified, also said that the plastic lining designed to keep the water from infiltrating the ground was slit to allow the water to escape..."

"The worker said he and at least five other former guards informed an NRC inspection team of the lagoon draining in 1978. NRC officials yesterday said they could find no record of the notification...."

"The allegations appeared Tuesday in the Chariho Times, a weekly newspaper serving parts of South County. They were independently obtained by the Journal-Bulletin...."

"The former worker, who served as a guard in 1978, when he said the illicit draining of the lagoons occurred, said he questioned a supervisor about the siphoning one weekend after he witnessed it."

"He said, 'It's as pure and clean as drinking water,' the worker related. Workers using conventional fire hoses then siphoned water out of the lagoons and drained it onto a spot located about five feet from the plant's north, or rear, gate. The flow created a gully in that spot beneath the plant's fence, opening a gap beneath the fence that later provoked an NRC citation for a security infraction."

"In fact, the water was contaminated not only with radioactivity, but with high levels of nitrates, minerals that could lead to "blue baby" syndrome in infants exposed to them by drinking...."

"...The siphoning routinely took place on weekends or holidays, when 'they just tossed the rules out,' the former employee said...."

"At times, he said, the company would pile sandbags around the lagoon's perimeters and unfurl additional portions of the plastic lining, thus adding more capacity to the four-foot deep lagoons. But the plastic would often rip or slip, collapsing the sandbag walls...."

"Jerry Roth, one of the NRC inspectors who spent time at the United Nuclear Site in 1978 to investigate charges of inadequate training for security personnel, said through a spokesman yesterday that he was unaware of any informants coming forward with allegations about the lagoon siphoning...."

"We don't ignore things like that," said the spokesman, Gary Sanborn. "We investigate them."

"But the former worker said yesterday that he and at least five other employees reported the violations directly to Roth."

The Westerly Sun, a newspaper distributed in Rhode Island, dated December 28, 1980 (Exhibit 3), contains an article which states, in part, as follows:

"...A former United Nuclear Corporation (UNC) employee has expanded on reports of alleged pumping of radioactive wastewater at the local uranium-recovery plant."

"The employee, who asked to remain anonymous, refuted earlier reports that the pumping had occurred during the fall of 1978. He claimed that the pumping of liquids from waste-holding trenches was performed between March and June 1978."

"The former employee was one of several interviewed recently by federal Nuclear Regulatory Commission officials about the alleged pumping at the uranium-recovery facility...."

"According to the employee, the raincovers on a series of trenches used by UNC in 1978 were too short to cover their entire length. The ends of the covers fell into the ends of the trenches, causing rainwater and wastewater to mix...."

"Pumping of the trenches' raincover, which the employee said UNC had permission to do, also resulted in lowering the level of the trenches...."

"The pumping was done only on weekends when the plant was shut down, the employee said. "That's why only a limited amount of persons saw it...."

"A UNC foreman performed the actual pumping, usually on Saturdays. 'He (foreman) was pumping what he believed to be water that was clean and free of radioactive pollutants. He wouldn't have done it on purpose,' the employee stated. He said he was told the water was sampled and deemed pure by UNC's Industrial Nuclear Safety (INS) inspector...."

"The former employee said that the pumping eroded a 2½ by 5 foot hole under the northeast corner of the fence near the trenches. Although no written citation was given to UNC, verbal warnings were given at the time it was discovered by NRC inspectors, he said. Earlier reports had said that the company was cited for the violation, which NRC officials denied...Trees and shrubs in the area where the water was pumped died, the employee said, probably because of the high concentrations of nitrates...."

"The interviewee also claims that NRC officials were told about the pumping by employees and 'six people signed statements.' 'But they had enough trouble at the time with an investigation of falsification of records in October of 1978,' he said. The investigation resulted in UNC being fined for falsification of test and training scores for some security personnel...."

C. INTERVIEW OF ALLEGER (INDIVIDUAL A)

Individual A was interviewed by NRC Investigators R. E. Shepherd and W. W. Kinney on December 3, 1980. Individual A said that during 1978 he was employed by the Wackenhut Corporation as a guard at the United Nuclear Corporation Fuel Recovery Operation facility, Wood River Junction, Rhode Island, hereinafter referred to as UNC. During the interview he furnished a signed statement (Exhibit 4) regarding the following information. On various occasions during the Spring until the Fall of 1978, he saw UNC operations personnel pumping the liquid contents from a lagoon, which he believes was Lagoon F, onto the ground. The liquid material being pumped from the lagoon had a greenish brown color and was being discharged to an area within approximately 10 yards south of the northeast corner of the protected area fence. He said that the liquid being pumped from under the rain cover on the lagoon was discharged from a fire hose situated on the ground within 3 to 6 feet from the fence and it created a gully and a hole under the fence which measured approximately 4 to 6 feet wide and 2 to 2½ feet deep on various occasions. He said that the above pumping operation from Lagoon F continued for about 4 to 5 months and that most of the pumping which he observed took place during the 11:00 p.m. to 7:00 a.m. work shift. He said that UNC operations personnel occasionally moved the fire hose to a different location in the same general area and they occasionally closed up the openings under the fence by grading the soil. He said that no additional security measures were taken to compensate for the holes under the fence caused by the pumping operation. Individual A said that he recalled making at least one entry in a perimeter fence check log or other security record, probably in May or June 1978, regarding the holes under the security fence, and he felt that notations would also be made in the Post A security log with regard to the same problem. Individual A said that the liquid material which was being discharged from the lagoon passed outside the fence line to a flat area approximately 10 feet from the fence where it was rapidly absorbed into the soil. He said that he had some concern about the health and safety aspects of the above pumping operation and that he discussed his concern with Security Shift Supervisors Fred DiRaimo, Leonard Mello and Michael Salerno.

Investigator's Note: A copy of a diagram of the UNC lagoon area, which was shown to Individual A and to other persons who were interviewed during this investigation, is attached to this report as Exhibit 5.

During the interview with Individual A, he said that the level of liquid in Lagoon F was lowered approximately 5 feet by the above pumping operation. He said that he did not see any sediment in the liquid that was discharged onto the ground. He said that there were rain covers on the lagoons and that in some cases the pumping of liquid was from under the rain covers. He said that he never discussed his concerns about the pumping operation with UNC management because security personnel had to go through the chain of command beginning with the security shift sergeants. He said that he also expressed his concern about the health and safety aspects of the above pumping operation with Sergeant Kevin Keating.

Investigator's Note: Individual A was apparently referring to Sergeant Kevin P. Keegan since there was no one by the name of Kevin Keating working on the UNC security force during 1978.

Individual A said that security guards at the above facility threw rocks, lead bricks and boulders into the lagoons and he described the largest boulder as being approximately the size of a basketball. He did not identify the guards involved in that activity.

Individual A said that he heard through conversation with other guards that UNC had put holes in the lagoon liners "to get the level down" but that he never saw any such activity and that his knowledge of it was based on hearsay.

#### D. DESCRIPTION OF FACILITY

A diagram of the UNC facility is attached to this report as Exhibit 6. The diagram shows the layout of the lagoon area in the northeast corner of the protected area as it was during 1978. The protected area boundary was enlarged on or about February 1979 when the licensee extended the south side of the protected area fence eastward and relocated the east side of the fence to join the extended fence at the southeast corner.



E. INTERVIEWS OF UNC SECURITY FORCE PERSONNEL

1. Interview of Individual B by NRC Investigator  
R. K. Christopher on December 16, 1980

Individual B, whose identity is being withheld upon request, said that he was employed by the Wackenhut Corporation as a member of the security force at UNC for a period of time during 1976 through 1978. During the interview with Individual B he furnished a sworn signed statement (Exhibit 7) regarding the following information. He said that shortly after starting work at the UNC facility he was on patrol duty during an off-shift period and observed what appeared to be a 3-inch hose running down into lagoon B. He said that he didn't go up on the lagoon wall to look at the hose and that he didn't know how far the hose ran into the lime solution on the surface of the lagoon. He said that the hose was attached to a pump which was running and that another hose attached to the pump was discharging water to the east side of the protected area fence. The discharge hose was situated within a few inches of the fence at a location which was about 5 to 10 feet north of a light pole. He said that shortly after seeing the above pumping operation he asked Tom Itteilag, a UNC Technician for Nuclear Industrial Safety, about it and was told that the water was safe. Individual B also said that he asked Frank Boyle, the janitor, about it and was told that everything was okay. He said that during the period from May 1976 through August 1977 he observed the above pumping of water from lagoon B about 15 times and that, to the best of his recollection, most of the pumping was done on off-shift periods during the work week, for periods of up to 4 hours. He said that he was pretty sure that there was no rain cover on lagoon B. He said that security people were always told to call the Supervisor in Processing, usually John Murphy or Jim Wakefield, if the pump stopped running. He said that there was never any appreciable drop in the level of lagoon B but that there was some drying of the lagoon surface after the pumping operation.

Individual B said that he never saw or heard of any large gullies or open areas being washed out under the fence as a result of the above pumping operation. He said that the largest opening that he ever saw under the fence in the northeast corner of the protected area measured no more than 3 inches deep and 2 or 3 feet wide. He said that those areas would always be quickly filled in.

Individual B said that he worked weekends for a period of time, including the year 1978, and he didn't recall seeing any pumping of liquid from the lagoons out to the fence. He said that he had no knowledge or recollection of any pumping of rainwater from the top of the lagoon rain covers and was not entirely sure if there were rain covers on the lagoons.

Individual B said that he had no knowledge of anyone throwing lead weights or other heavy objects into the lagoons or through the lagoon rain covers and that he had no knowledge of any holes or penetrations being intentionally made in the lagoon liners. He said that when lagoon B was in use he noticed that after some water was pumped into this lagoon, it seemed to disappear quickly and that Tom Itteilag and Frank Boyle jokingly told him that the water went through a hole in the bottom of the lagoon liner.

2. Interview of Leonard Mello, Jr. by NRC Investigator  
R. V. Christopher on December 17, 1980

Mr. Mello said that he was employed by the Wackenhut Corporation as a Security Officer at the UNC facility from February 1977 to late 1980 and was promoted to Sergeant in early 1978. During the interview he furnished a sworn signed statement (Exhibit 8) regarding the following information. He said that in October or November 1978, while working the second shift (4:00 p.m.-midnight), he saw water being pumped from lagoon G and being discharged "into the field" from a fire hose which was sticking through a hole, measuring 4 inches square, which had been cut in the base of the protected area fence. He said that the hole in the fence was located about 30 feet from the northeast corner of the fence. He said that there was no rain cover on lagoon G and that the water being discharged from the fire hose was of a yellowish color. He said that he did not see any soil erosion under the fence resulting from the above pumping operation which lasted about a week. He said that the level of lagoon G dropped several feet as a result of the pumping operation. He said that he wrote an Irregularity Report concerning the hole in the fence and the pumping of lagoon G and was later told by Dale Schultz, UNC Manager of Compliance, not to write any more Irregularity Reports on the pumping of lagoons because "it was being taken care of." Mello said that he asked Tom Itteilag about the pumping from lagoon G and was told not to worry about it because the water was clean. Mello said that Itteilag was maintaining the pump to keep it going during the pumping from this lagoon.

Mello said that, about a week after the pumping of lagoon G, he saw water being pumped at different times from lagoons F and E which did not have any rain covers on them at the time. He said that the water pumped from lagoons F and E was discharged into the same area where the water from lagoon G had been discharged. He said that the pumping of water from lagoons F and E appeared to last for a period of several hours and occurred mostly during the day shifts. He estimated that the water level in lagoons F and E dropped about 10 inches during the pumping from these lagoons which he said occurred approximately 3 times during October and November 1978.

Mello said that during the period that the water was being pumped from either lagoon E or lagoon F, he saw a gully under the fence, measuring about 2 feet across and about a foot deep, where the water was being discharged from the hose connected to the pump. He said that he asked the UNC supervisor if he should write an Irregularity Report concerning the hole and was told not to do so because Dale Shultz had said not to do so. Mello said that the hole remained there for about two days until it was filled. He said that at no time did he ever see a hole in the fence bigger than the one described above as a result of the pumping of the lagoon.

Mello said that green rain covers were put over the lagoons in the latter part of 1978 and that he recalled seeing rainwater being pumped off the cover of lagoon G and being discharged from a hose to the northeast corner of the fence. He said that he never saw rainwater being pumped off the rain covers on lagoons F and E.

Mello said that he had no knowledge of anyone throwing lead weights or other heavy objects into the lagoons or through the lagoon rain covers nor did he know of anyone deliberately punching holes in or piercing the lagoon liners.

During the interview with Mello he was shown a copy of an Irregularity Report (Exhibit 9) dated October 9, 1978, concerning a 4-inch square hole which had been cut in the north side of the protected area fence. The hole was cut to permit passage of a hose which was being used to pump from the lagoon area to the swimming pools located outside the protected area. He said that he felt that the aforementioned Irregularity Report which he wrote concerning the hole in the fence and the pumping of lagoon G related to the same hole.

On December 18, 1980, Mello was telephonically contacted by NRC Investigator R. K. Christopher for clarification of information contained in his signed statement. Mello said that the hole in the fence, measuring 4 inches square, which is mentioned on page 1 of his signed statement as being situated about 30 feet from the northeast corner of the perimeter fence, was actually situated on the north side of the fence. He said that the hole under the fence, measuring about 2 feet across and about a foot deep, which is mentioned on page 4 of his signed statement, was located on the east side of the perimeter fence, about 30 feet from the northeast corner of the fence.

On January 13, 1980, Mello was telephonically contacted by NRC Investigator R. K. Christopher for further clarification of information in his signed statement. Mello said that his signed statement was in error where it says that he observed material being pumped from lagoons G, E and F during October and November 1978 and that the material was being pumped out to the northeast corner of the perimeter fence. He said that he now recalls that the pumping operation involving lagoons G, E and F occurred during the Spring of 1978, rather than October and November 1978, and that, to the best of his recollection, the pumping was done from the top of the rain covers on these lagoons to remove rainwater. He said that he also remembered that he saw a pump set up by lagoon G on one occasion during October or November 1978 but that the pump was not running on that occasion. He said that the lagoon rain cover was partially rolled up and laying towards the side of the lagoon and that the pump hose was laying on the rim of the lagoon. He also retracted that portion of his signed statement where it states that the rain covers were not on lagoons G, E and F when he observed the pumping operation involving those lagoons. He further clarified his signed statement by saying that he did not see waste material being pumped from the lagoons onto the ground as he previously indicated during the interview with him on December 17, 1980.

3. Interview of Individual C by NRC Investigators  
R. K. Christopher, J. Roth and R. E. Shepherd  
on December 18, 1980

Individual C, whose identity is being withheld upon request, said that he was employed as a Security Officer at the UNC facility during a period of time including January through November 1978. During the interview with Individual C he furnished a sworn signed statement (Exhibit 10) regarding the following information. He said that during Thanksgiving week in November 1978, he observed a hole, measuring approximately 2 feet deep and 4 feet wide, under the fence on the east side of the protected area. The hole was located approximately 5 feet from the northeast corner of the fence. He said that he had asked a UNC security supervisor about the hole and was told not to worry about it and that it would be taken care of. The UNC supervisor also told him that the licensee had been taking rainwater off the lagoon rain covers. The following weekend he saw Robert Weber, a UNC employee, checking a pump located on the northeast corner of lagoon D. The pump was running and the suction hose was laying on top of the rain cover of lagoon D. The outlet hose from the pump was discharging water into a gully which formed the hole under the fence as described above. He said that the rain cover on lagoon D had sunk into the lagoon with the result that the water on top of the rain cover was commingled with the water under it. He said that he asked Weber if he was pumping contaminated water and was told by Weber that he was not pumping contaminated water. Individual C said that he has no way of knowing if the water pumped out to the fence area was actually contaminated or not. He said that the color of the water which he saw being discharged from lagoon D was clear and he estimated that the water level of the lagoon dropped four feet during the above pumping operation. He said that he did not know how long the pump was operating because Weber shut the pump off shortly after he got there. He said that he never saw the pump operating again but did see the pump in the same location on the following weekend and that the suction hose was in the lagoon water and not on top of the rain cover on that occasion. It was Individual C's opinion that all of the guards, including Mike Morrissey, Will Perreault, Charles Liebherr, Steve Grenier, and Russell Lacey should have seen the above pumping operation and he said that he later talked about it in general with Perreault and Morrissey.

Individual C said that the hole under the fence remained there until late December and that he discussed the hole with Dale Schultz, the acting Shift Supervisor, and was told that it would be taken care of. During the discussion of the above information with Individual C, he said that he was mistaken about the time period that the pumping operation occurred and that he now realized that it occurred early in 1978, possibly March.

Individual C said that he believed that UNC hired a contractor named Chamberlain to fill in the hole under the fence described above. He said that security personnel submitted Irregularity Reports concerning the hole under the fence and that Schultz told Individual C and others not to write any more Irregularity Reports because the hole would be taken care of.

Individual C said that during the summer of 1977, he was talking with Frank Boyle, the janitor, and Jim Wakefield, a Process Supervisor, and heard Boyle tell Wakefield that the reason they were having seepage into the ground under lagoon B was that an individual, whose name Boyle mentioned, had deliberately punched holes in the liner to lower the water level of the lagoon. Individual C said that he thinks that the person whose name Boyle mentioned was Owen McCormick.

Individual C said that during the Winter of 1978, possibly in February, he saw a guard named Downs throw a cement block into lagoon C to see if it was frozen enough to walk over.

4. Interview of Individual D by NRC Investigators  
R. K. Christopher and R. E. Sneyherd on  
January 12, 1978

Individual D, whose identity is being withheld upon request, said that he was employed as a guard at the UNC facility for a period of time including the year 1977 through June 1978. He said that during the late Spring or middle of Summer of 1977 he saw lagoon waste being pumped onto the ground after it had rained. He said that he could not pinpoint the year as being 1978. He said that a suction pump was situated on the bank of the lagoon which is nearest the east side of the protected area fence and that a fire hose, which was discharging the liquid waste from the lagoon, was under or close to the east side of the fence, approximately 30 to 35 feet from the northeast corner of the fence. He said that the water being discharged from the fire hose had a light greenish color. He

said that he "thinks", but cannot say for sure, that the suction hose connected to the pump was in lagoon D or G and that he does not know if there were any rain covers on those lagoons when he saw the above pumping operation. He said that he did not see the end of the suction hose positioned in the lagoon because security personnel were not allowed to go up on the banks of the lagoon. He said that the water being pumped from the lagoon eroded the soil under the fence, at the above location, and resulted in a hole under the fence measuring approximately 18 to 20 inches deep and approximately 2 feet wide. He said that the pumping operation continued for two or three weeks during the afternoon or evening hours and that the pumping was usually going on when he came on duty at 3:00 p.m. on a given day. He said that he thinks that the hole under the fence was not filled in until approximately two days after the pumping operation was completed. He said that he did not see the above pumping operation occurring on weekends and that he does not recall who was working on that operation. Individual D was shown a diagram of the UNC lagoon area (Exhibit 5) and he said that the discharge hose from the suction pump was draped into the lagoon that is closest to the east side of the protected area fence and which he indicated on the diagram as being lagoon D. He said that he had no knowledge of anyone punching holes in or piercing lagoon liners nor of anyone throwing lead weights or other heavy objects into the lagoons or through the lagoon rain covers. Individual D declined to furnish a signed statement regarding the above information because he said that he could not remember enough about it.

5. Summary of Additional Security Personnel Interviews

The following individuals were employed at the UNC facility during 1978 as members of the licensee's contract security force or as licensee employees having security supervisory duties. They were interviewed on the dates indicated below and all denied having any information which would substantiate the four allegations listed in section II.A of this report.

- a. Individual E, whose identity is being withheld upon request, was interviewed on December 16, 1980 and furnished a sworn signed statement (Exhibit 11).
- b. Alfred A. DiRaimo was interviewed on December 17, 1980 and furnished a signed statement (Exhibit 12).
- c. Robert L. Hampton was interviewed on December 18, 1980 and furnished a sworn signed statement (Exhibit 13).

- d. Dale M. Schultz was interviewed on December 18, 1980 and furnished a sworn signed statement (Exhibit 14).
- e. Donald B. Downs was interviewed on January 13, 1981 and furnished a sworn signed statement (Exhibit 15).
- f. Robert E. White was interviewed on January 13, 1981 and furnished a sworn signed statement (Exhibit 16).
- g. Individual F, whose identity is being withheld upon request, was interviewed on January 14, 1981 and furnished a sworn signed statement (Exhibit 17).

During the aforementioned interview with Dale M. Schultz he stated that if he had told Leonard Mello not to write an Irregularity Report concerning a hole in the north side of the perimeter fence, as indicated on page 4 of Mello's signed statement, it was because the hole, which measured 4 inches square, had been there for several months and was small enough to be within NRC regulatory limits. He said that this hole was used to run a fire hose from the lagoon to the swimming pools on the north side of the fence. He said that he had no knowledge of Mello being instructed by a UNC supervisor not to write an Irregularity Report on a hole under the fence in the northeast corner of the fence, as indicated on page 5 of Mello's signed statement. Schultz said that he had instructed the security supervisors not to write redundant Irregularity Reports on holes in the rear fence because it was a repetitive problem that was identified and routinely handled by maintenance. He said that he was aware that rainwater was periodically pumped out of the lagoon rain covers and that lagoon G was pumped out of rainwater several times before waste effluent had entered it but that he was not sure where this water was pumped to.

During the aforementioned interview with Donald B. Downs he said that he was employed by the Wackenhut Corporation as a Security Officer at the UNC facility from July 24, 1976 until July 24, 1978 and that he worked primarily on the 11:00 p.m. to 7:00 a.m. workshift and on weekends. He said that he had never thrown anything into a lagoon nor did he ever throw anything into a lagoon that was frozen to see if he could walk on it.

Investigator's Note: The above statement of Downs is a denial of the allegation on page 8 of Individual C's signed statement



in which Individual C stated that, during the winter of 1978, he saw Downs throw a cinder block into lagoon C to see if it was frozen enough for him (Downs) to walk over.

During the aforementioned interview with Robert E. White he stated that he recalled several occasions during the winter of 1977 or 1978 that he saw small rocks on top of the ice on the lagoons but that he didn't recall whether or not the rocks broke the ice and that he didn't pay any attention to the matter.

#### F. INTERVIEWS OF UNC OPERATIONS PERSONNEL

The following individuals were employed at the UNC facility during 1978 in varying capacities including plant management, supervision, lagoon waste processing, health physics and maintenance. They were interviewed on the dates indicated below and all denied having any knowledge which would substantiate the four allegations listed in section II.A of this report.

1. James H. Wakefield, Production Supervisor, was interviewed on December 4, 1980 and furnished a sworn signed statement (Exhibit 18).

During the interview with Wakefield he said that the pumping of rainwater from the tops of the lagoon covers probably started around January or February 1978 and that he did not think that this pumping operation lasted more than six months. He said the above pumping of rainwater was discontinued primarily because the rain covers ripped and the rainwater commingled with the lagoon contents. He said that Robert Weber, who reported to Wakefield at that time, would be more knowledgeable than himself about the pumping operation. He said that the first rain cover that they had a problem with was the cover on lagoon F which got ripped at the point where the inlet line from the process area entered the lagoon. He said that he didn't know how the rain cover on lagoon F got ripped but that it occurred around April or May 1978 when they were pumping sludge and slurry from the process area into lagoon F but not out of it. He said that the pumping of rainwater from the tops of the lagoon covers would normally be done during the day shift and he didn't know if any such pumping was done on the night shift. He said that Gary Partelo also worked on the above pumping operation. He said that the rainwater was pumped from the lagoon covers onto the ground and that it

would be discharged outside the protected area fence by means of a fire hose connected to the pump. He said that he did not see the hose which discharged the rainwater onto the ground and that Weber or Partelo would definitely know where the rainwater was pumped to. He said that the rainwater on the lagoon covers was sampled and analyzed for radioactivity by UNC Nuclear and Industrial Safety (NIS) personnel before it was pumped onto the ground and that NIS personnel had to approve of such pumping before it could start. He said that the rain covers on the lagoons were installed around January 1978 or possibly earlier.

2. Individual G, whose identity is being withheld upon request, was interviewed on December 5, 1980 and furnished a signed statement (Exhibit 19).

During the interview with Individual G he said that he did not have any direct involvement in the pumping of rainwater from the lagoon covers. He said that he saw rainwater on top of the covers but never saw it being pumped off. He said that the rain covers on the lagoons were installed about three or four years ago.

3. Individual H, whose identity is being withheld upon request, was interviewed on December 5, 1980 and furnished a signed statement (Exhibit 20).

During the interview with Individual H he said that, approximately five years ago, he took four or five core samples from lagoon B by inserting a pipe, measuring about 3 feet long and 1½ inches in diameter, into the surface of the lagoon where the depth of the lagoon was about 4 feet deep. He said that he never contacted the lagoon liner when taking the core samples. He said that anyone who was not knowledgeable in the method he was using to take the samples and who may have seen him or other UNC personnel taking such samples could have mistakenly thought that they were punching holes in the lagoon liner. He said that Robert Sonntag, who is no longer employed at the UNC facility, took approximately 100 core samples of lagoon B, using the same method that Individual H had used.

4. Individual I, whose identity is being withheld upon request, was interviewed on December 9, 1980 and furnished a signed statement (Exhibit 21).

During the interview with Individual I he said that, around February or March 1978, UNC operations personnel pumped rainwater from lagoon G onto the ground near the northeast corner of the protected area fence. He said that lagoon G had not yet been used to contain waste process material at the time of this pumping operation. He said that a fire hose, measuring about 2½ inches in diameter, was connected to the pump and that the other end of the hose was situated about 6 feet from the east side of the fence, approximately 25 feet south of the northeast corner of the fence. He said that the above pumping operation took about 1½ to 2 days to complete and that it was done during the day shift which he worked. He said that he did not know if any of the above pumping operation was done during the second or third work shifts. Individual I said that the level of rainwater in lagoon G was lowered by about 4 or 5 feet as a result of the above pumping operation. He said that he does not recall seeing any openings or erosion under the fence resulting from the above pumping operation. He said that he did not see or participate in any pumping of rainwater from the tops of the lagoon rain covers and that he was not sure but that it could have been in 1978, after the rainwater was pumped out of lagoon G, as described above, that rain covers were put on most of the lagoons. He said that the rain covers on lagoons F and G had quite a bit of rainwater on them and that this water was pumped off the covers. He said that he was pretty sure that maintenance or operations personnel pumped off the rainwater but that he didn't know when it occurred or where the water was pumped to.

Individual I said that a core sampling device was made to sample the sediment in lagoon B but that he didn't know if the device was ever used. He described the device as being a pipe, measuring about 4 feet long and 1 inch in diameter, inside of which was another pipe of smaller diameter. He said that samples of lagoon B were taken, shortly before lagoons F and G were formed, but he had no specific information regarding the above samples.

5. Karl Helgeson, Manager of Nuclear and Industrial Safety (NIS), was interviewed on December 9, 1980 and furnished a sworn signed statement (Exhibit 22).

During the interview with Helgeson, he said that about 2 feet of rainwater was pumped from lagoon G around March or April 1978 and was discharged onto the ground from a fire hose situated within about 1 foot of the east side of the perimeter fence in the immediate vicinity of an electric light pole adjacent to lagoon D. He said that lagoon G had not been used to contain waste process

material at the time of the above pumping operation. He said that the discharged rainwater caused the soil under the fence to be a little muddy but that there were no gaps between the fence and the ground resulting from the pumping operation. He said that all pumping of rainwater from the lagoon area was done during the day shift (7:30 a.m. to 4:30 p.m.) because health physics personnel, who sampled and analyzed the rainwater and whose approval had to be obtained before any such pumping could be done, did not work during the off-shift periods. He said that the pumping of material from one lagoon to another could have been done during any shift but that it probably was not done during the third shift (11:30 p.m. to 8:30 a.m.) because of a lack of personnel. He said that he does not know of any pumping operation that would reduce the level of a lagoon by 5 feet except when they pumped from one lagoon to another.

Helgeson said that Tom Ashley was involved in the above pumping of rainwater from lagoon G, from an engineering standpoint, and that samples of the rainwater were taken and analyzed by Frank Cronin who is no longer employed at UNC. Helgeson said that his records show that the rainwater was analyzed but that he didn't know how many times that the rainwater was pumped from the lagoon area.

With regard to the pumping of rainwater from the tops of the lagoon covers, he said that health physics personnel sampled the rainwater every time that this was done. He said that some of the rain covers were installed around February or March 1978 and that all of the covers were on by May or June 1978. He said that there was ice on the rain covers during February and March 1978 and that they started pumping rain water off the covers around April 1978. He said that he has a log, which the inspector reviewed, showing that they pumped rainwater from the rain covers on lagoons C, D, F and G between March and June 1978. He said that he did not know when the rain covers were ripped to the point where they could not be used. He said that the discharge hose from the process building was put under the rain cover on either lagoon E or F in order not to submerge the cover in the solids in the lagoon, since the cover was already ripped or damaged and that there was no pumping from that lagoon anyway. He had no information as to when that occurred. Helgeson said that Robert Sonntag, a former UNC employee, took more than 50 samples of lagoon B in late 1977 and that Bill Conlan, another former UNC employee, took samples of lagoon A in early 1978, to determine its uranium content. He said that lagoon A was about 9 or 10 feet deep and that lagoon B was between 5 and 6 feet deep. He said that lagoon B was sampled by using a pipe measuring about 3 feet long and 1½ to 2 inches in diameter. Helgeson said that lagoon A samples were taken by using a chrome tube, measuring about 24 to 28 inches long and 1½ inches in diameter, which was obtained from the United Nuclear Corporation facility in Montville, Connecticut.

6. Individual J, whose identity is being withheld upon request, was interviewed on December 10, 1980 and furnished a sworn signed statement (Exhibit 23).

During the interview with Individual J, he said that around the Spring of 1978, UNC operations personnel pumped rainwater from the rain covers in the area of lagoons C, D, E, F and G and that the water was discharged onto the ground near the northeast corner of the protected area fence. He said that the discharged rainwater seeped into the ground and some of it passed under the protected area fence and went 3 or 4 feet outside the fence line. He said that he had first hand knowledge that conductivity measurements were made on three or four samples of the rainwater that was pumped off the lagoon covers onto the ground. He said that sometime after the Spring of 1978 UNC operations personnel pumped rainwater from lagoon G which had a liner in it but which had not yet been used to contain process material. He estimated that 6 feet of rainwater was pumped from lagoon G onto the ground in the same general area described above and that it took less than one week to do this. He said that conductivity measurements were also made on the rainwater pumped from lagoon G. He said that all of the pumping of rainwater from lagoon G and from the tops of the lagoon rain covers would have had to occur during the day shift because such pumping would have to be approved by health physics personnel. He said that there was no pumping of rainwater during any off-shift hours when he was on site. He said that he was not sure if a fire hose was used to discharge the rainwater onto the ground from lagoon G or from the tops of the lagoon rain covers and that he could not recall seeing any erosion of soil under the fence resulting from the above pumping operations. He described the rainwater as being clear. He said that some soil samples were taken both inside and outside the protected area fence in the general area where the rainwater had been discharged and that this was a routine sampling operation. He said that the fence line on the east side of the protected area had been moved outward, away from the lagoon area, approximately 1½ to 2 years ago.

Individual J was re-interviewed on January 13, 1981 and he furnished the following additional information. He said that there was never any rain cover on lagoon B nor was there ever any rainwater pumped from lagoon B. He said that any rainwater in lagoon B evaporated fast enough so that pumping was not necessary. He said that they may have pumped some sludge from lagoon B into lagoon A and that lagoon B was emptied into lagoon A when they started digging the trenches. He said that the largest accumulation of rainwater that he ever saw in lagoon B was no more than 2 inches, accumulated in the low spots on the lagoon surface.

He said that the rain cover on lagoon C may not have been as long as they wanted it but he felt that it was long enough to completely cover the lagoon so that there would be no commingling of the rainwater on top of the rain cover and the material in the lagoon.

He said that all of the lagoon covers and lagoon liners were black. He said that the pump which was used to pump rainwater off the lagoon covers could pump about 45 gallons per minute and would run out of gasoline after about 3½ hours. He said that just because a pump is running doesn't necessarily mean that it is pumping anything. He said that the licensee has generated test well data which would refute the allegations that lagoon waste material was pumped onto the ground.

7. Nicholas Vuono, Health Physics Technician, was interviewed on December 10, 1980 and furnished a sworn signed statement (Exhibit 24).
8. Individual K, whose identity is being withheld upon request, was interviewed on December 10, 1980 and furnished a sworn signed statement (Exhibit 25).
9. Individual L, whose identity is being withheld upon request, was interviewed on December 10, 1980 and furnished a sworn signed statement (Exhibit 26).

During the interview with Individual L, he said that he was aware that UNC had plans to pump rainwater from the tops of the lagoon covers sometime in 1978 but that he had no direct involvement in that operation and that he didn't know if the plans were ever carried out.

10. Individual M, whose identity is being withheld upon request, was interviewed on December 16, 1980 and furnished a sworn signed statement (Exhibit 27).

During the interview with Individual M, he said that, sometime during 1978, rainwater had been pumped from lagoon G onto the ground and that this occurred before lagoon G was used to contain any waste material. He said that the rainwater was pumped onto the ground in the immediate vicinity of the lagoon area and that the level of rainwater in lagoon G was lowered at least 4 to 6 feet by the above pumping operation. He said that the rainwater discharged from lagoon G created some puddles, no deeper than 3 or 4 inches, both inside and outside the east side of the protected area fence at a location which was about 20 to 30 feet south of the northeast corner of the fence. He said that the discharged rainwater eroded the soil under the fence at the above location and left a space measuring no more than 4 inches high and 2 feet wide but that the space under the fence was filled in by operations personnel before the pumping

operation was completed on any given day. He said that the pumping of rainwater from lagoon G was a continuous operation that lasted about 2 months. Individual M said that rainwater was also pumped from the rain covers of the lagoons, which he believed were lagoons F and G, and that this occurred around the same general time in 1978 when they pumped rainwater from lagoon G. He said that the rainwater from the lagoon covers was pumped onto the ground adjoining the lagoon area and that there was less erosion of soil under the fence than was caused by the pumping of rainwater from lagoon G. He said that, to the best of his knowledge, none of the above pumping operations occurred on weekends, holidays, or during the second and third workshifts, but that it was possible that some pumping could have been done on weekends if they were working on overtime to do other things.

Individual M was re-interviewed on January 14, 1981 and was shown a report (Exhibit 28) on the status of the volume and water-collection area of the lagoons as of December 1977. A notation on the report states that lagoon G was pumped dry of rain water on October 15, 1977. After reviewing the above report, Individual M said that he was not sure but that it was probably during the early fall of 1977 that rainwater was pumped from lagoon G, rather than sometime during 1978 as he previously stated when interviewed on December 16, 1980. He said that it is possible that rainwater was pumped off the rain covers of lagoon D and other lagoons, in addition to lagoons F and G as mentioned in his signed statement, but that the only time that he ever saw the level of a lagoon lowered 4 feet was when rainwater was pumped from lagoon G as previously described in his sworn signed statement.

11. Individual N, whose identity is being withheld upon request, was interviewed on December 17, 1980 and furnished a signed statement (Exhibit 29).
12. Robert J. Gregg, UNC Plant Manager, was interviewed on December 3 and December 17, 1980 and he furnished a sworn signed statement (Exhibit 30).

During the interviews with Gregg, he said that he was aware that rainwater was being pumped from the tops of the lagoon rain covers, approximately in early 1978, but that he never saw this being done. He said that his employment at the UNC facility began in December 1977 when he took the position of Manager of Quality Assurance.

13. Charles E. Bowers, former UNC General Manager-President from December 1974 to December 1980, was interviewed on December 17, 1980 and furnished a sworn signed statement (Exhibit 31).

14. Francis J. Boyle, Maintenance Employee, was interviewed on December 18, 1980 and furnished a signed statement (Exhibit 32). He was re-interviewed on January 13, 1981 and furnished a sworn signed statement (Exhibit 33).

During the interview with Boyle on December 18, he said that he could not recall ever discussing with any member of the security force any pumping of liquid in the lagoon area at any time. He said that he has worked at the UNC facility since 1964 and that his job duties included grounds-keeping, cutting grass, maintenance and building repairs. With respect to the allegation that the pumping of liquid from the lagoon area resulted in soil erosion and openings under the security fence, he said it would have been his job to fill any such openings but that he had never been requested to do.

During the interview with Boyle on January 13, 1981 he denied that he ever said to Jim Wakefield or anyone else that there was seepage under any lagoon or that Owen McCormick, who is no longer employed at UNC, or that any other individual had deliberately punched holes in the liner of lagoon B to lower the water level in the lagoon.

Investigator's Note: The above statement of Boyle's is a denial of the allegation on page 7 of Individual C's signed statement in which Individual C stated that he heard Boyle tell Jim Wakefield that Owen McCormick deliberately punched holes in the liner of lagoon B to lower the water level.

15. Kenneth Motator Generalist, was interviewed on January 13, 1981 and said that he would be willing to furnish a sworn signed statement if requested. He said that on various occasions, probably during 1980, he saw dozens of plastic bung caps in various lagoons which he conjectured had been scaled or thrown into the lagoons although he never saw anyone do that. He described the bung caps as being about 2½ inches to 3 inches in diameter and weighing no more than one ounce. He said that the caps were used on various sized chemical containers.
16. Thomas Ashley, Senior Plant Chemist, was interviewed on December 18, 1980 and January 14, 1981. He furnished a sworn signed statement (Exhibit 34) on January 14 and provided the following information. He said that he helped to pump out 2 or 3 feet of rainwater from lagoon G around December 1977, before lagoon G was used to hold waste material. He said that on at least one occasion, when he saw rainwater being pumped from the top of the rain cover on lagoon G, the fire hose connected to the pump discharged the water under the vehicle gate on the north side of the protected area fence near the



northeast corner of the fence. He estimated that any erosion of soil under the vehicle gate resulting from the above pumping operation would have left a space measuring no more than 2 or 3 inches high and 4 inches wide. He said that on other occasions, dates not indicated, he recalled seeing rainwater being pumped from either lagoon G, before it was used to contain waste material, or from the tops of the lagoon rain covers, and that the water was discharged on the ground adjoining the east side of the protected area fence near the northeast corner. He said that he did not see any noticeable erosion of the soil under the fence at that location. He said that, probably around the Fall of 1977 or the Spring of 1978, he helped to pump out about 12 inches of rainwater from the tops of the rain covers on lagoons E and F. He said that the discharge hose, during that pumping operation, passed over or around lagoon D and was put under or near the east side of the protected area fence, approximately 25 feet south of the northeast corner, without any noticeable erosion of the soil under the fence. He said that, to the best of his knowledge, water was pumped from the lagoon rain covers only during the day shift, but not on weekends or holidays. He said that the rainwater on the lagoon covers was always tested by UNC Nuclear Industrial Safety personnel before it was pumped onto the ground. Ashley said that he and Russell Smith, a former UNC management employee, had the joint responsibility of initiating the pumping of rainwater from the lagoon area as described above and that it was also their responsibility to monitor the volume changes and condition of the lagoons and the water collecting on the rain covers. During the interview with Ashley on January 14, he provided the inspector with a copy of a report (Exhibit 28) which indicates that lagoon G was pumped dry of rainwater on October 15, 1977. Ashley said that the above report was apparently initiated by Russell Smith. Ashley said that neither he nor anyone else, to the best of his knowledge, initiated the pumping of rainwater off the top of the lagoon rain covers when there was any contamination of the rainwater or commingling of the rainwater with the lagoon supernate under the covers.

G. INTERVIEW OF DAVID CHAMBERLAIN, OWNER, D. E. CHAMBERLAIN CONSTRUCTION, INC., BOX 382, CHARLESTOWN, RHODE ISLAND

Chamberlain was interviewed by NRC Investigators R. K. Christopher and R. E. Shepherd on January 12, 1981 and he furnished the following information. He said that during the past four years he has done various types of work at the UNC facility including the grading of the soil along the protected area fence line to check erosion. He said that he does not recall seeing or correcting any openings under the protected area fence, including the east side of the fence near the northeast corner, which were more than 2 to 4 inches deep and 6 inches wide. He said that his records show that he completed various jobs at the UNC facility during 1978 but that none of that work related to soil erosion or correcting any openings under the protected area fence.

## H. EXAMINATION of NRC FILES

1. On June 28, 1978, during a Physical Security Inspection at the UNC facility (Inspection Report No. 78-15), an individual, who is identified in this investigation report as Individual C, confidentially reported a number of allegations to the NRC Inspector, including the following: He said that during February and March 1978, two UNC employees named Weber and Parloy operated water pumps to drain off some of the waste lagoons. He said that the waste water was directed from the lagoons to a drainage ditch and seeped into underground wells and that high nitrogen levels were discovered in some residents' water sources. He said that licensee management covered up the incident by claiming that the nitrogen levels were a result of fertilizer applied to the soil by a farmer whose property was located adjacent to the UNC facility.

Individual C further stated that licensee management told all employees on site that they had only removed water from the lagoons which had accumulated on plastic covers that were stretched across the surface of the lagoons and had become a weight burden during February and March when the lagoons froze. Individual C said that this story was a "cover" and that high enriched uranium wastes had probably been removed indiscriminately to make room for additional process waste as the lagoons were at capacity levels. Individual C made no mention of soil erosion under the security fence, resulting from the above-described pumping operation, when he reported this matter to the NRC Inspector on June 28, 1978.

The above allegation was examined by NRC Region I on July 5, 1978 and it was found that:

- a. Only water had been removed from the lagoons in February and March 1978.
- b. NRC was aware of the drainage and that the problem had been coordinated initially with OSHA, State of Rhode Island (EPA Activity) in November 1977 and that no HEU had been drained.

On July 12, 1978, Individual C telephoned the above NRC Inspector and he was informed of the above findings. Individual C declined the need for NRC to provide him with a written response to his allegations.

2. Investigation Report No. 78-72 contains the results of an investigation by NRC Region I concerning security-related allegations which were made by members of the UNC security force in September 1978. None of the allegations related to the pumping of liquid from the lagoon area onto the ground or to any resultant soil erosion under the security fence. NRC Inspector J. Roth did not participate in that investigation.

3. Inspection Report No. 80-14 for an August 18-19, 1980 inspection, includes information from previous NRC inspections regarding the licensee's Liquid Waste Handling System and Test Well Sample Results. The following information contained in the above report and in other inspection reports provides a chronological sequence of events which occurred prior to and during 1978 and which are considered to be pertinent to this investigation.

- a. Liquid Waste Handling System

Aqueous process wastes which contained low concentrations of uranium were neutralized using lime, and the resultant slurry was pumped to a lagoon system. In the lagoon system the solids settled out. The supernatant liquid was supposed to be discharged to the Pawcatuck River after samples showed the radioactive concentrations were within NRC (AEC) regulatory limits given in Appendix B to 10 CFR 20.

When the facility was started up in 1964, there was one 36 by 72 foot lagoon to receive the liquid waste. The lagoon had a plastic lining. Lagoon A was filled during plant operations so that a new lagoon, lagoon B, was needed. Lagoon B, which also had a plastic lining, was placed in service in February 1966. In 1967 it was reported that the liner in lagoon B had ruptured and, in mid 1967, the licensee had to discharge 10,000 gallons of water from lagoon A to the Pawcatuck River and from lagoon B to lagoon A for repair of the liner.

In late 1969 it was reported that the liquid levels in the lagoons had not reached the level which required discharge of the supernatant liquid to the river. No discharges from the lagoons to the river had been made for two years. The reason given was the water was leaving the lagoon by evaporation or seepage.

According to an October 23, 1974 report from Dr. William E. Kelley, Consultant Hydrogeologist to United Nuclear Corporation, precipitation estimated from records at Kingston, six miles to the east in the upper Pawcatuck River Basin, averages about 45 inches per year. A table of evaporation data taken at Kingston in Dr. Kelly's report showed that from 1963 through 1972, excluding 1964, the average yearly evaporation was 27.2 inches. Therefore, the liquid level in a lagoon would rise about 17 inches a year from unevaporated precipitation. Of course, the addition of process liquid waste would fill the lagoon more quickly.

From the above discussion it is evident that the lagoon system was leaking and that lagoon B was probably the leaking lagoon.

In a report for an inspection made in late October 1970, the inspectors reported that the liquid level in the lagoons remained constant. The inspector made the point to the licensee that test wells to determine seepage from the lagoons were needed. In a report for an inspection in early January 1972, the inspectors reported that test wells were being sunk around the liquid waste lagoons.

According to inspection reports for inspections made in January and July 1973, accumulated solids were removed from lagoon A during August through October 1972 and were shipped off-site for burial. The renewed lagoon A was fitted with a polyvinyl chloride bottom liner and a polyethylene top liner as part of the renewal operation. The renewed lagoon A, measuring 100 by 90 feet and 8 feet deep was put into operation on December 16, 1972. The licensee continued to use the renewed lagoon A and lagoon B until early 1977.

According to Inspection Report No. 77-08, in early 1977, the licensee dug a lagoon extension and lined its walls with plastic. The lagoon extension was placed in service on April 15, 1977. The licensee also obtained two above-ground swimming pools for contingency use on April 13 and indicated that the solids in lagoon B would be placed in lagoon A and that lagoon B would be replaced.

Inspection Report No. 77-09 for a July 11-15, 1977 inspection, notes that the licensee had replaced lagoon B with 5 lagoons designated as C, D, E, F, and G. Process waste was to enter lagoon C and cascade to D, E, and F as necessary. Lagoon G was not completely installed in mid July 1977.

Inspection Report No. 78-09 for a March 22-24, 1978 inspection, notes that the inspector observed that covers had been placed on the waste lagoons and that snow, ice and rainwater had collected on the covers. The licensee informed the inspector of his intent to sample the liquid and then discharge it to unrestricted areas when thawed, to prevent the addition of unnecessary liquid to the lagoons. The inspector also noted that the licensee's controls appeared to be adequate to prevent the release of contaminated water. The rainfall on the remainder of the site was allowed to run off to unrestricted areas thus no unreviewed hazards were foreseen in releasing the rainfall collected on the lagoon covers.

Inspection Report No. 78-13 for a May 30 - June 2, 1978 inspection, notes that the plastic covers put over the lagoon to separate the rainwater from lagoon water were torn and that there was no plastic interface between the lagoon process waste and the rainwater. The licensee indicated they would remove and dispose of the torn plastic covers.

In Inspection Report No. 78-18, for an inspection conducted on July 25-27, 1978, it was reported that the lagoon covers remained in the lagoons. It was also reported that the licensee was using pumps and perforated hoses to

wet down the sunny slope of a lagoon to increase evaporation of the liquid. It was also reported that a liner failure in lagoon C resulted in no more than 5,000 gallons of lagoon water being lost to the ground. The evaluation by the licensee of this unusual event pointed out that the concentration of radionuclides in the lagoon were within 10 CFR 20 limits for release to unrestricted areas.

b. Test Well Sample Results

Seven test wells were installed and samples taken during 1972. These samples showed alpha and beta radioactivity. The presence of radioactivity in the ground water was reported in NRC (AEC) inspection reports from 1972 through 1980. In these reports it was assumed that uranium was the source of the radioactivity in the ground water. The concentrations of the radioactivity in the ground water were well within the 10 CFR 20 limits for release of uranium-235 in liquid to unrestricted areas which is  $3 \times 10^{-5}$   $\mu\text{Ci/ml}$  (66,000 dpm/liter).

The fact that the ground water contained radionuclides other than uranium was brought out as a result of a condition imposed on the licensee on December 27, 1978. This condition required the licensee to collect water samples on a monthly basis at the monitoring wells (25 in number) and analyze the samples for gross alpha and gross beta activity. If the gross alpha and gross beta exceed 15 picocuries/liter and 50 picocuries/liter, respectively, the licensee had to identify the major radionuclides and determine their concentrations. The radionuclides other than uranium included fission products such as strontium-90 and cesium-139. The results of sample analyses conducted by the contractor of the licensee showed the concentrations of the radionuclides in the ground water were within the 10 CFR 20 Appendix B limits; however, the concentrations of radium-228 (a daughter of thorium) and strontium-90 were relatively high in some wells.

The test well data confirmed the fact that lagoon leakage allowed radioactive liquid to escape from the lagoons into the ground water. (The liquid would have been discharged to the Pawcatuck River under conditions of 10 CFR 20 if it had not escaped to the ground water).

I. EXAMINATION OF LICENSEE RECORDS

1. The investigators examined the licensee's Post A security log, for the period January through December 1978, and other security records, including Irregularity Reports, for the period July through December 1978. With the exception of the Post A log, the licensee was unable to locate the security records, including Irregularity Reports, for the period January through June 1978. These records were eventually located by the licensee, as of February 5, 1981, but were not available for NRC review when the investigators were onsite.

The Post A security log, dated April 2, 1978, contains a notation regarding a "bad hole on east corner", as of 2336 hours on that date. Further details regarding the above notation were not available for NRC review because, as stated above, the licensee was unable to locate additional security records covering that period.

The Post A log, dated October 9, 1978, contains a notation made at 0958 hours, regarding a hole cut in the north fence for a hose from the lagoon. Details concerning the above notation are contained in the Irregularity Report (Exhibit 9) which was previously discussed in section II.E.2 of this report regarding the interview with Leonard Mello, Jr. on December 17, 1980.

2. The investigators were not able to determine from a review of licensee records the specific dates when rainwater was pumped off various lagoon rain covers, nor the amount of rainwater that was pumped off in each instance. As noted previously in section II.F.10 of this report regarding the interview with Individual M, a licensee report (Exhibit 28) on the status of the volume and water-collection area of the lagoons indicates that lagoon G was pumped dry of rainwater on October 15, 1977. A similar report, dated April 4, 1978, has a notation which indicates that 43,000 gallons of rainwater was pumped from lagoons F and G on March 22, 1978. The licensee's Health Physics log book contains an entry, dated March 28, 1978, which indicates that 2 feet of rainwater was pumped off the lagoon covers, not further indentified. The licensee constructed a chronology (Exhibit 35) of events related to the lagoon system and pumping records. Exhibit 35 contains a notation which indicates that some rainwater pumping operations may not have been recorded.

#### J. SOIL SAMPLES TAKEN BY NRC

Physical evidence to show whether or not radioactive materials were pumped from the lagoons onto the ground as alleged was attempted to be gained by sampling the soil at the locations on the fence line where the discharge was alleged to have taken place. It is reasonable to assume that if the material pumped from the lagoons was only liquid containing no sludge, the liquid containing the radionuclides would have gone through the soil into the ground water and would not have remained in the soil. This assumption is based on the premise that little or no ion exchange with the soil or absorption of the radionuclides into the soil would take place. It is also reasonable to assume that if lagoon solids were mixed with the liquid, these solids would remain with the soil and any radionuclides in the soil as a result would be detectable by gamma spectroscopic analyses.

Soil samples were taken by NRC Region I personnel on December 12, 1980, and were taken at locations described in Figure I (Exhibit 36). Samples were taken at the following depths: top 2 inches of soil, 6-8 inch depth, and 12-14 inch depth. The results of the gamma spectroscopic analyses showed that only those radionuclides normally encountered in soil were present in the samples. Further, the concentrations of the radionuclides were at levels normally encountered in soil samples. The results of the sample analyses are listed in Table I (Exhibit 37). The results of samples from offsite locations at the same time are listed also for comparison. Comparison indicates that the onsite samples contained no lagoon sludge material.

No uranium was identified in any of the samples taken on the UNC site. As discussed previously, one would not expect to find uranium in the samples unless lagoon solids were present in the soil. The concentration of uranium-235 in the lagoon solids (sludge) was about 150 picocuries per gram of sludge. The concentration of uranium in the lagoon liquid was about 0.01 picocuries per millimeter of liquid. These concentrations show that the uranium was in an insoluble form in the lagoons, and one should not expect to find uranium in the soil samples unless lagoon solids were present. (The minimum detection activity of uranium-235 in soil is 0.4 picocuries per gram).

NRC Region I is planning to take additional soil samples of the area where the lagoon waste was allegedly discharged onto the ground. These samples are scheduled to be taken during the latter part of February 1981, at a depth of approximately 4 feet, and the results will be reported in a subsequent NRC Investigation Report.

NOTE: Sample results are  $\pm 1$  standard deviation counting error. Also, all sample results should include a systematic error of  $\pm 50\%$ .

III STATUS OF INVESTIGATION

This investigation continues in an OPEN status pending review and analysis of the information reported herein by IE Management and the analysis of additional soil samples which NRC Region I personnel will obtain at the UNC facility.



#### IV. ENCLOSURES

1. The Chariho Times article, 11/26/80
2. Providence Journal article, 11/26/80
3. Westerly Sun article, 12/28/80
4. Statement of Individual A, 12/3/80
5. Diagram of UNC lagoon area
6. Diagram of UNC facility
7. Statement of Individual B, 12/16/80
8. Statement of Leonard Mello, Jr., 12/17/80
9. UNC Irregularity Report, 10/9/78
10. Statement of Individual C, 12/18/80
11. Statement of Individual E, 12/16/80
12. Statement of Alfred A. DiRaimo, 12/17/80
13. Statement of Robert L. Hampton, 12/18/80
14. Statement of Dale M. Schultz, 12/18/80
15. Statement of Donald B. Downs, 1/13/81
16. Statement of Robert E. White, 1/13/81
17. Statement of Individual F, 1/14/81
18. Statement of James H. Wakefield, 12/4/80
19. Statement of Individual G, 12/5/80
20. Statement of Individual H, 12/5/80

21. Statement of Individual I, 12/9/80 .
22. Statement of Karl Helgeson, 12/9/80
23. Statement of Individual J, 12/10/80
24. Statement of Nicholas Vuono, 12/10/80
25. Statement of Individual K, 12/10/80
26. Statement of Individual L, 12/16/80
27. Statement of Individual M, 12/16/80
28. Lagoon Status Report, 12/5/77
29. Statement of Individual N, 12/17/80
30. Statement of Robert J. Gregg, 12/17/80
31. Statement of Charles E. Bowers, 12/17/80
32. Statement of Francis J. Boyle, 12/18/80
33. Statement of Francis J. Boyle, 1/13/81
34. Statement of Thomas Ashley, 1/14/81
35. Process Waste Lagoon Chronology
36. Soil Sample Locations, Figure I, 12/12/80
37. Soil Sample Analyses, Table I

# Waste pumped to open ground: 2 UNC workers

The Chariho Times  
November 26, 1980

By BILL RODRIGUEZ

CHARLESTOWN — The United Nuclear Corp. uranium scrap recovery operation here was regularly pumping liquid waste from an evaporation lagoon out onto the ground during 1978, two former UNC employees have told *The Chariho Times*.

It was liquid leaking and overflowing from these settlement lagoons during the 1970s that has caused current concern over a migrating groundwater plume of contamination high in nitrates and containing traces of uranium and isotopes.

Reportedly, the pumping continued periodically for months, eroding a gully under the fence around the plant, a passage large enough to lead to a citation by the NRC for a security violation.

The two former employees, in independent interviews, said that they gave information about the pumping and related matters to NRC investigators who in the fall of 1978 were looking into reports of falsified security records, an investigation that resulted in the massive dismissal of guards at the facility.

They also reported to the NRC that one of the plastic-lined lagoons had been deliberately pierced along its bottom to allow it to drain, since the evaporation process was not effective, they said. And one spoke of employees competing to see who could heave 80-to-90-pound lead weights the farthest through lagoon rain covers.

Asked if the NRC pursued the charges, Walter G. Martin, chief of the safeguards branch for Region 1, said that any such non-security violations uncovered then by investigators from his office would have been "turned over to our health and safety people here, who would follow up on them."

Herbert W. Crocker, chief of fuel facilities project section, whose office would have received the allegations, said this week that he didn't recall being informed about such charges at the time and that he would speak with the interviewer, currently out sick, who conducted the 1978 debriefing of the guards.

"If he does mention something about it, we'll find out why we haven't done anything with it," he declared. "And if he doesn't, then we'd like to get in touch with these chaps and see what's what."

"Certainly a licensee isn't supposed to dump stuff out on the ground that has any radioactive material, even if it's below the limits," Mr. Crocker added. "And if such was done and it turns out it was above background by the limits, why it's going to have to be cleaned up before they decommission that facility. They aren't going to be able to walk away from that plant until they fulfill the decommissioning criteria."

The former employees, who insisted that they not be identified, both said that the pumping of the lagoon liquid onto the ground was common knowledge around the plant.

"The pumping, everybody knew it. I saw it," one said, estimating that one lagoon's level was lowered five feet by this process. "A guard would say, 'You're not supposed to pump like that.' 'Shut up and go back inside,' (he would be told)."

"They'd drag them up between the lagoons, put a fire hose in and run another fire hose off the other end of the pump and out under the fence," the other man stated. "It was eroding under the fence really bad. You could practically walk out under the fence."

The large, gasoline motor-powered pumps were ostensibly on the site in order to shunt waste liquid from one lagoon to another, to adjust levels, and to pump rainwater off of lagoon coverings. (An NRC report of a May 30-June 2, 1978, inspection noted that one such lagoon covering was rendered useless from numerous tears.)

The Virginia-based company had announced plans to decommission by April of this year, though recent waste shipment violations have led to a delay. The official NRC deadline is mid-1982.

Mr. Crocker said that the awaited radioactivity limitations for soil contamination should be available by next Tuesday's public meeting on UNC (to be held at Chariho High School at 7:30 p.m. in the Vo-Tech meeting room).

Malcolm Grant, the governor's advisor on environmental matters, who will be attending the meeting, along with Mr. Crocker and other NRC and state officials, said that soil contamination at the site of the pumping will have to be checked if the charge proves true.

"I would presume that if nitrates are of concern in the plume from the

(Please turn to page 12)

# UNC waste pumped

(Continued from page 1)

leakage, they'd be of concern if you (pumped) the stuff," he remarked.

He pointed out that UNC had made unorthodox suggestions for the disposal of the lagoon contents, in April of 1978, during the period of the charges. "We are aware that the company at one point asked for permission to spray lagoon material (on the adjoining potato field) because of the nitrates, for use as a fertilizer," he said. "They were denied permission by the NRC. And then they asked to be able to spray it on

trees bordering the field, and they were also denied permission."

Mr. Crocker noted that if such pumping took place, it is possible that the effluent did not technically exceed radiation limits for release to an unrestricted area.

He said that a review of records at the Wood River Junction plant in August of this year revealed that a break in the wall lining of lagoon C resulted in leakage but that sampling of the released liquid found it to not exceed regulation limits of radioactivity and therefore did not require reporting to the NRC.

Under NRC regulations, he also noted, licensed nuclear facilities are able to release relatively high concentrations of radioactivity periodically, just so that their release average is within permissible bounds. "In other words, the licensee can discharge above that concentration for a short time if they made it up with more dilute material later. That's the way the regulation is written."

Mr. Crocker said that UNC has "had a lot of problems with their lagoons over the years." The evaporation pond system is designed to allow the chemical neutralization of processing water that contained nitric acid and traces of uranium. The process resulted in an accumulating sediment of calcium nitrate, the waste sludge that is currently not being allowed to be buried at a disposal site in Nevada, while packaging procedures are being made secure.

In reviewing the history of the company's evaporation pond system, Mr. Crocker said it began with a single large lagoon when the plant opened in 1964. Filled with sediment by 1972, it was scraped out and a new liner was installed.

By that point, the second large lagoon, lagoon B, was in use. It was replaced in 1977, after having been found to be leaking, perhaps from as early as 1973; this is one apparent source of the contamination plume, primarily nitrates, found to have migrated to the Pawcatuck River, .5 mile downgrade. Smaller "trenches," identified as C, D, E, F and G were also

installed, the latter three connected by an overflow system, to adjust their levels.

Problems with the inability of the lagoon system to handle the 1,000 gallons of liquid waste produced daily peaked in 1978, the year of the reported pumping off of the liquid. The problems supposedly ended in late December of that year, with the installation of a large domed holding tank for the effluent, but not before the NRC complained that the company was "not putting enough advanced thought into their actions" regarding the lagoon system.

An NRC report of a Dec. 14, 1978, meeting on the waste problem went on to state: "As evidence of this, it was noted that six months after the submittal that described one design, UNC submitted a completely new design for approval. Also, although UNC knew the capacity of the existing lagoons, they waited until they were in an emergency situation to request a separate amendment for use of the new tank."

In the months prior to that meeting, UNC was chastised by the federal agency for allowing two lagoons to fill to nearly overflowing with processing liquid and rainwater.

In addition, a consulting geological engineer, Donald L. Warner, reported to the NRC on Nov. 24, 1978, that since the storage capacity of the lagoons was limited to only a fraction of the effluent produced, most of it "until mid-1977 must have escaped into the subsurface, where it has caused groundwater contamination" by its overflowing.

Given a Sept. 1, 1979, deadline to solve its processing liquid problem, the company finally gave up on the lagoon system, spending \$300,000 to install by that date a series of six reinforced concrete and steel filter tanks and equipment to press out liquid from the sediment.

Exhibit 2

# Ex-guard: nuclear firm violated safety rules

United Nuclear pumped radioactive waste into the ground, ex-worker says

By MICHAEL A. HILTZIK  
Journal-Bulletin Staff Writer

**CHARLESTOWN** — Radioactive wastewater from holding lagoons at United Nuclear Corp.'s uranium reclamation plant here was routinely pumped out onto the ground in 1978 when the lagoons threatened to spill over, a former guard at the facility said yesterday.

The worker, who asked to remain unidentified, also said that the plastic lining designed to keep the water from infiltrating the ground was slit to allow the water to escape.

Both practices, if verified, would be considered serious violations of Nuclear Regulatory Commission rules, NRC officials said yesterday.

The worker said he and at least five other former guards informed an NRC inspection team of the lagoon draining in 1978. NRC officials yesterday said they could find no record of the notification.

The water placed in the lagoons is widely believed to have produced radioactive contamination of an aquifer, or underground watercourse, discovered by state officials in 1977. A NRC hydrogeologist has determined that considerable leakage occurred sometime between 1971 and 1977. The aquifer, in which measurements of radioactivity far exceed federal drinking water standards, runs beneath United Nuclear's 1,140-acre plant site near the hamlet of Wood River Junction here.

State officials say they have had no plans to use the aquifer as a drinking water supply, but the measurements were first taken by the state Water Resources Board, which develops drinking water reservoirs.

United Nuclear built the isolated Wood River Junction facility in 1963, and this year announced plans to close it by mid-1981. Present and former officers of the

company who might be familiar with the facility's operation.

\* \* \*

THE ALLEGATIONS appeared Tuesday in the *Charino Times*, a weekly newspaper serving parts of South County. They were independently obtained by the *Journal-Bulletin*.

Malcolm K. Grant, an aide to Governor Garrahy who is overseeing the plant's closure, said yesterday that he will attempt to determine the actual site of the dumping and "demand a sampling of the specific area." One of the state's major concerns is that the company leave no traces of radioactive contamination at the plant site when it finally closes the facility.

The former worker, who served as a guard in 1978, when he said the illicit draining of the lagoons occurred, said he questioned a supervisor about the siphoning one weekend after he witnessed it.

"He said, 'It's as pure and clean as drinking water,'" the worker related. Workers using conventional fire hoses then siphoned water out of the lagoons and drained it onto a spot located about five feet from the plant's north, or rear, gate. The flow created a gully in that spot beneath the plant's fence, opening a gap beneath the fence that later provoked an NRC citation for a security infraction.

In fact, the water was contaminated not only with radioactivity, but with high levels of nitrates, minerals that could lead to "blue baby" syndrome in infants exposed to them by drinking. The NRC on several occasions rejected United Nuclear's disposal plans for the water because of fears the disposal would contaminate soil and groundwater.

THE SIPHONING routinely took place on weekends or holidays, when "they just tossed the rules out," the former employee said. He said the company experienced a chronic problem with the water levels in the lagoons, especially during late fall and winter, when heavy rainfall would fill the pits up faster than evaporation could empty them. "About this time of the year," he said, "they'd go nuts."

At times, he said, the company would pile sandbags around the lagoons' perimeters and unfurl additional portions of the plastic lining, thus adding more capacity to the four-foot deep lagoons. But the plastic would often rip or slip, collapsing the sandbag walls.

Around the time of the alleged siphoning, Charles E. Bowers, then the plant manager, asked the NRC for "emergency" permission to use an unlicensed holding tank to store some of the water.

The NRC gave permission, but not without first chastising plant officials for their poor planning.

Finally acknowledging the problem, the NRC last year ordered United Nuclear to dismantle its lagoon system by July, 1982.

Jerry Roth, one of the NRC inspectors who spent time at the United Nuclear site in 1978 to investigate charges of inadequate training for security personnel, said through a spokesman yesterday that he was unaware of any informants coming forward with allegations about the lagoon siphoning.

"We don't ignore things like that," said the spokesman, Gary Sanborn. "We investigate them."

But the former worker said yesterday that he and at least five other employees reported the violations directly to Roth.

At UNC Plant

# Former Worker Details Waste-pumping Claims

By DAVID SMITH  
CHARLESTOWN — A former United Nuclear Corporation (UNC) employee has expanded on reports of alleged pumping of radioactive wastewater at the local uranium-recovery plant.

The employee, who asked to remain anonymous, refuted earlier reports that the pumping had occurred during the fall of 1978. He claimed that the pumping of liquids from waste-holding trenches was performed between March and June 1978.

The former employee was one of several interviewed recently by federal Nuclear Regulatory Commission officials about the alleged pumping at the uranium-recovery facility. He said the interview went on for several hours and was held in a hotel in the Mystic area.

He told The Sun on Friday that the NRC investigators "were very upset" about former UNC employees leaking the initial report of the pumping to the press because of its reflection on the agency. He called the investigators' demeanor "abusive" and "hostile."

According to the employee, the raincovers on a series of trenches used by UNC in 1978 were too short to cover their entire length. The ends of the covers fell into the ends of the trenches, causing rainwater and wastewater to mix.

A series of six lined tren-

ches were used by UNC to hold wastewater generated by the plant when the alleged pumping occurred. Trenches were dug to replace a leaking waste pond, or lagoon, in 1977, according to an independent report to the NRC in November 1977. The company later decided to install a more efficient holding-tank for wastes.

Pumping of the trenches' raincover, which the employee said UNC had permission to do, also resulted in lowering the level of the trenches.

In reaction to the allegations about pumping of wastewater onto the ground, Dennis Spurgon, UNC vice president of operations in Falls Church, Va., has said that the raincovers were pumped only after being sampled for pollutants.

UNC had earlier asked the NRC for permission to pump the wastewater onto potato fields in the area, but that request was denied.

The pumping was done only on weekends when the plant was shut down, the employee said. "That's why only a limited amount of persons saw it." The weekends are also an unlikely time for NRC inspectors to come to the plant because permission would have to be sought to enter restricted areas, and besides, there would be no one working, he explained.

A UNC foreman performed the actual pumping, usually on Saturdays. "He (foreman) was pumping what he believed to be water that was clean and free of radioactive pollutants. He wouldn't have done it on purpose," the employee stated. He said he was told the water was sampled and deemed pure by UNC's Industrial Nuclear Safety (INS) inspector.

The INS inspector is the same person who said a tray sent to UNC's Montville, Conn. plant was clean, the employee alleged. The tray was later discovered to contain a small amount of uranium scrap material. The transportation of the material in 1978 was a violation of UNC's license with the NRC and the company was fined.

The former employee said that the pumping eroded a 2½ by 5 foot hole under the northeast corner of the fence near the trenches. Although no written citation was given to UNC, verbal warnings were given at the time it was discovered by NRC in-

spectors, he said. Earlier reports had said that the company was cited for the violation, which NRC officials denied.

Trees and shrubs in the area where the water was pumped died, the employee said, probably because of the high concentrations of nitrates.

At the time the trench was pumped, they were close to overflowing, he said. He added that UNC officials were concerned that the rainwater on the covers would mix with the wastewater, adding to the amount it already had to handle, "otherwise, why pump if you have raincovers?" he asked.

The interviewee also claims that NRC officials were told about the pumping by employees and "six people signed statements.

"But they had enough trouble at the time with an investigation of falsification of records in October of 1978," he said. The investigation resulted in UNC being fined for falsification of test and training scores for some security personnel.

He said he would not believe anything that UNC staff persons said because, he alleged, they are protecting their jobs and pensions. The former employee said he would submit himself to a polygraph test about the pumping. "Would UNC officials do the same?" he asked.

The employee also questioned why UNC officials and higher echelon staff at the Wood River Junction plant are not being moved to UNC's Montville facility.

He claims that former Plant Manager Charles Bowers was asked to leave his position as manager and was forced to resign. Bowers has insisted his party was amicable and had been considered for several months. The employee, who has been watching company advertising for professionals at Montville, said many of those sought are available at the local facility.

Bowers resigned his job in November and has taken a position as general manager of a new nickel battery division at Yardney Electric Corp. of Pawcatuck.

The employee defended Bowers by saying that he probably did not know about the pumping. "Information was deliberately withheld from him," the employee claimed. "He would hire managers for this and managers for this." He added that the managers would sometimes not relay information in order not to "rock the boat" or to "save their jobs."

"Bowers did not want trouble, that's why he hired managers," the employee alleged.

The employee predicted that after the investigation is completed, a fine will be imposed by NRC. UNC is now in the process of decommissioning the local plant, which has also been plagued by reports of groundwater contamination and delay in removing wastes after transport was barred after a leaking shipment was discovered at a Nevada disposal site.

EXHIBIT 4

STATEMENT OF INDIVIDUAL A

December 3, 1980

I, hereby make the following voluntary statement to Mr. Raymond E. Shepherd, who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I was formerly employed by the Wackenhut Corporation as a security guard at the United Nuclear Corporation Fuel Recovery Operation (UNC) at Wood River Junction, Rhode Island.

During my employment at UNC, I worked various security work shifts, including the 3:00 p.m. to 11:00 p.m. shift, the 11:00 p.m. to 7:00 a.m. shift, and the 7:00 a.m. to 3:00 p.m. shift. On various occasions during the period from the Spring until the Fall of 1978, I performed security patrol duties and other security related duties at the UNC facility and observed that UNC operations personnel were using a pump, fire hoses and other equipment to pump the liquid contents from under the lagoon cover of one of the outdoor lagoons, which I believe was lagoon "F" which is so indicated on a diagram of the UNC lagoon area which was shown to me by Mr. Shepherd on this date. The liquid material that was being pumped from lagoon "F" was being discharged from a fire hose, connected to the pump, to an area within approximately ten yards south of the northeast corner of the protected area fence. The end of the fire hose from which the liquid contents were being discharged was situated on the ground within approximately three to six feet from the fence. I observed the liquid which was being pumped from the lagoon and which was being discharged from the fire hose and the liquid appeared to be of a greenish brown color. The liquid being discharged from the fire hose eroded a path of earth or soil between the end of the hose and the fence and also eroded the soil under the fence and thereby left an opening under the fence which measured approximately four to six feet wide and approximately two feet to two and one half feet deep on various occasions. The above described pumping operation from lagoon "F" continued for a period of approximately four to five months and most of the pumping operation which I observed was being done during the 11:00 p.m. to 7:00 a.m. security work shift. UNC operations personnel occasionally moved the fire hose which was discharging the liquid from the lagoon and they graded the soil where the above hole was located and thereby closed up the hole under the fence. In relocating the end of the fire hose at a different location in the same general area of the fence line, as described above, the liquid being pumped from under the lagoon cover of lagoon "F", would cause similar erosion of the soil between the end of the fire hose and the fence line and would also cause similar erosion under the fence line and thereby create openings under the fence such that a person my size could crawl under the fence. The holes or openings under the fence, as described above, would vary in measurement at various times during the period that the liquid was being pumped toward the fence line from lagoon "F". However, at no time, to my knowledge, was a guard posted at the opening under the fence nor was any additional security measure taken to compensate for the degraded condition of the fence to assure its security integrity. During my employment at UNC I had discussed the openings under the fence, as described above, with my security shift supervisors and I



also made entries in some of the security records which are maintained to bring attention and appropriate action to problems related to security, such as openings under the protected area fence. It is my opinion that the UNC operations personnel occasionally closed up an opening under the fence, which was created by the pumping operation, not for security reasons but possibly for operational reasons. The liquid material which was being discharged from the lagoon also passed outside the fence to a flat area of ground and extended to about ten feet from the fence line. This liquid material did not accumulate in puddles outside the fence line but appeared to be absorbed by the soil quite rapidly. In addition to my concern about the security aspect of the openings under the fence, as described above, I also had some concern about the health and safety aspect of the above pumping operation and the discharge of lagoon liquid material onto the soil and the absorption of the material in the ground.

I recall discussing my concern about the health and safety aspect of the pumping operation with some of my security shift supervisors including Fred Diraimo, Leonard Mello and Michael Salerno, but they did not appear to know any more than I did regarding possible health hazards involved in the above pumping operation. The above described areas where the liquid from lagoon "F" was being discharged were not roped off or posted with any special signs, nor were any barriers put up to prevent security personnel or employees from entering those areas. During my normal patrol activity in the protected area I was required to wear protective clothing, i.e., shoe covers and a laboratory smock, but on numerous occasions security personnel, including myself, were required to respond to nuisance alarms in the area where the lagoon liquid was being discharged and in responding to an alarm I was required to respond to the alarm point area without having to obtain protective clothing before doing so.

To my knowledge, UNC is unaware of my contact with the NRC. For personal reasons, I must ask that the NRC extend as much confidentiality as possible to me in this matter.

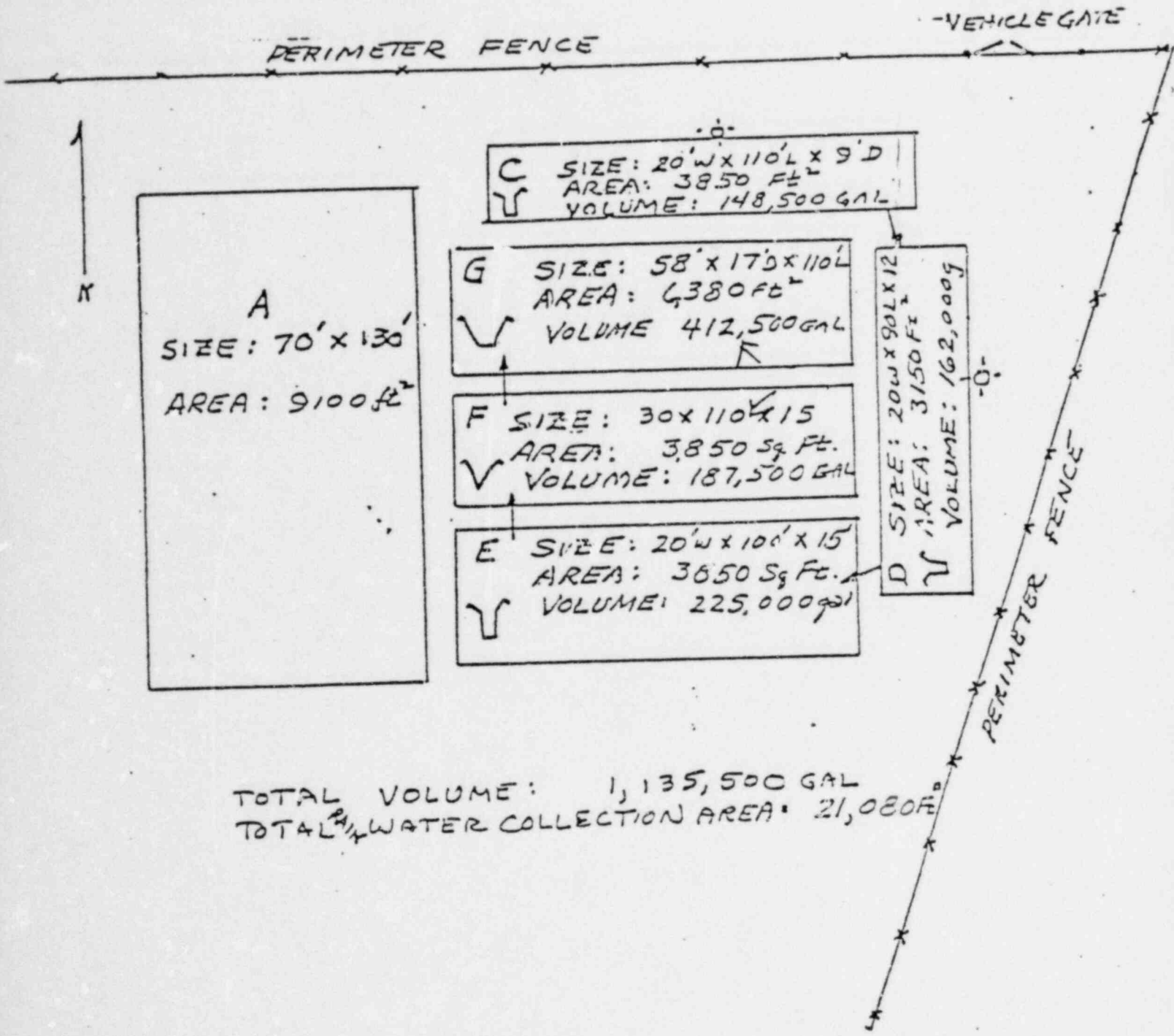
I have read the foregoing statement consisting of six handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

(Signature) 1:00 p.m.

Witnessed:  
Raymond E. Shepherd, USNRC 12/3/80

William Kinney, USNRC 12/3/80

NOTE: Information in the above statement which would disclose the identity of Individual A has been deleted or paraphrased in accordance with 10 CFR 9.



A  
 SIZE: 70' x 130'  
 AREA: 9100 ft<sup>2</sup>

C SIZE: 20' W x 110' L x 9' D  
 AREA: 3850 ft<sup>2</sup>  
 VOLUME: 148,500 GAL

G SIZE: 58' x 170' x 110' L  
 AREA: 6380 ft<sup>2</sup>  
 VOLUME 412,500 GAL

F SIZE: 30 x 110 x 15  
 AREA: 3850 sq. Ft.  
 VOLUME: 187,500 GAL

E SIZE: 20' W x 100' L x 15'  
 AREA: 3650 sq. Ft.  
 VOLUME: 225,000 gal

D SIZE: 20' W x 90' L x 12'  
 AREA: 3150 ft<sup>2</sup>  
 VOLUME: 162,000 gal

TOTAL VOLUME: 1,135,500 GAL  
 TOTAL WATER COLLECTION AREA: 21,080 ft<sup>2</sup>



EXHIBIT 7

STATEMENT OF INDIVIDUAL B

DATE: 12/16/80

TIME: 9:15 PM

I, do hereby make the following free and voluntary statement to Mr. R. K. Christopher, who has identified himself to me as an Investigator for the U.S. Nuclear Regulatory Commission. I make this statement with no threats having been made against me or promises extended to me. I was employed as a security officer by the Wackenhut Corp. at the United Nuclear Corp. at Wood River Junction for a period of time during 1976 through 1978.

Shortly after I started working at the plant I recall making a round of the protected area on an offshift. I heard a pump running as I continued my round. I observed what appeared to be a three inch hose running down into the lagoon. I didn't actually go up on the lagoon wall to look so I don't know how far this line ran into the lagoon. This hose was attached to a pump that I believe was sitting at the base of the mound. There was another hose running from the pump out to the east perimeter fence approximately 5 ft. to 10 ft. north of the light pole. This hose ran up to within a few inches of the fence or actually touched it. I observed water pumping out of the hose from the pump. The water was coming out in a surge pattern much like that of a sump pump. I have no idea how long that pump was run at that time. I made no record of this in any logs as everything was secure.

Shortly after seeing this pumping I asked Tom Ittelag, a Technician for NIS (Nuclear Industrial Safety) why this water was being pumped out of the lagoon. He told me that the water was safe. I cannot recall why he said the water was being pumped. After that I asked Tom Ittelag and the Janitor, Frank Boyle about it and they always told me everything was okay.

In terms of the water that was being pumped it would splash through the fence and flow southeast through the tall grass and trees.

During the period from May 1976 through Aug 1977 I observed this pumping of lagoon B about 15 times. To the best of my recollection most of the pumping was done on offshifts and during the work week. I don't recall how long the pumpings would go on but based on the time of our rounds I would estimate the pumping was done for periods of up to 4 hours. I can't recall any particular individuals that were maintaining or setting up the pumps but I recall we were always told to call the Supervisor in Processing if the pumps stopped. That usually would have been John Murphy or Jim Wakefield.

During these pumpings I never observed or heard of any large gullies or open areas being washed out under the fence as a result of the pumping of the lagoon water. The largest gully I ever saw under the fence in the northeast corner of the perimeter never measured more than 3 inches deep and 2 or three feet wide. To my recollection these areas would always be quickly filled in. There wasn't nearly enough water coming out during the pumping to cause erosion under the fence to the magnitude of 2 or three feet deep and 4 to 5 feet across.

To the best of my recollection I don't think I ever wrote an irregularity report on the perimeter fence in relationship to lagoon pumping. With regard to lagoon B I am pretty sure there was no cover over this lagoon.

I worked weekends at the plant during 1978 and I don't recall any further pumping from any of the lagoons out into the fence during that period.

I do not have any knowledge or recollection of any operation to pump rainwater off the top of lagoon covers and I am not entirely sure if there were covers on the lagoons.

I am not aware of anyone at anytime throwing rocks, boulders, lead weights or other heavy objects into the lagoons and through any rain covers. However, I recall hearing unsubstantiated rumors sometime in 1978 that a shotgun and a radio were at the bottom of a lagoon. There was never any further specifics on this and it never became more than a rumor.

I have no personal knowledge of anyone ever piercing or punching holes in the lagoon liners for the purpose of draining of the water from the lagoons. However, when we had lagoon B I noticed that after water was pumped into lagoon B the water seemed to disappear quickly. I asked Tom Ittelag and Frank Boyle about it at different times. Both told me that the water went through the hole in the bottom. They never told me how the hole got in the bottom of the liner or why but always just said in a joking manner that the water was going through the hole. I believed that there was a hole in the bottom of the liner based on the way they joked about it and because of the way the water disappeared.

I had never spoken to the NRC about the concern I had about the pumping because I accepted the word of Tom Ittelag that the water was safe and because the NRC and other agencies were there so often that I felt the operation was being run safely.

I have no knowledge of and never observed any holes or penetrations being intentionally made in any of the lagoons (lagoons C thru G).

In terms of the pumping of lagoon B there was never any appreciable drop in the level of the lagoon, however, you would see some drying of the lagoon surface after the pumping.

I am not aware of anyone from the plant, either guards or otherwise complaining to the NRC about pumping of the lagoons to the NRC. I don't know who else specifically saw the pumping but I think Tim Ashburner and David Zarelle, both former guards also saw the pumping.

During the pumping of lagoon B I do not believe there was any cover on the lagoons but the hose went into the lime solution on the surface but I couldn't tell how far it went down.

I have read, initialed all corrections and understand the above eight page statement which was written by R. K. Christopher of the NRC as we discussed its contents. It is true and accurate to the best of my recollection and ability. I also desire that my identity be kept confidential in this investigation.

(Signature) 12/16/80 11:08 PM

Subscribed and sworn to this 16th day of Dec. 1980 at 11:08 PM

R. K. Christopher 12/16/80 11:09 PM  
Investigator, USNRC

Witness:

Jerome Roth, Fuel Facilities Inspector USNRC  
12/16/80 11:10 PM

NOTE: Information in the above statement which would disclose the identity of Individual B has been deleted or paraphrased in accordance with 10 CFR 9.

EXHIBIT 8

STATEMENT OF LEONARD MELLO, JR.

DATE: 12/17/80  
TIME: 10:40 AM

I, Leonard Mello, Jr., do hereby make the following free and voluntary statement to Mr. R. K. Christopher, who has identified himself to me as an Investigator for the U.S. Nuclear Regulatory Commission. I make this statement with no threats having been made against me or promises extended to me. I was employed by the Wackenhut Corp. as a Security Officer at the United Nuclear Corp. Plant at Wood River Junction. I was employed there from Feb. 1977 to late 1980. I was promoted to Sgt. in early 1978.

I recall that in either Oct. or Nov. of 1978 I was making a round of the fence perimeter. To the best of my recollection I was on second shift which was from 4:00 PM to 12:00 midnight. As I walked the Perimeter I observed what appeared to be a 3 inch fire hose sticking through a 4 inch by 4 inch hole in the base of the fence. The nozzle end of the hose extended through the fence approximately 6 inches. The hose was gray in color. This hole and the hose was located about 30 ft from the Northeast corner of the Perimeter fence. I observed that this hose was connected to a pump which was located by the lagoons. I walked up to the pump and observed another piece of 3 inch hose running from the pump into lagoon G as reflected in the drawing shown to me by Mr. Christopher. There was no cover on the lagoon at this time and water was being pumped directly out of the lagoon into the field creating a large puddle. The water was yellow'ish as I can recall. The water flowed in a pulsating manner such as you would see in a sump pump. This pumping from lagoon G lasted about a week. I recall Tom Ittelag was maintaining the pump to keep it going. His boss, Frank Cronin was also monitoring the pumping from this lagoon. I did not observe any soil erosion under the perimeter fence as a result of this pumping.

About a week after the pumping of lagoon G I observed the pump hose in both lagoons F and E at different times and water was being pumped from those lagoons out into the same area. There were no raincovers over the lagoons (F and E) at the time. I observed the hose end directly in lagoons E and F pumping water directly from those lagoons into the same area where the fence was cut. These pumpings in lagoons F and E appeared to last for a period of several hours and not to the extent like they pumped G. This pumping occurred mostly during day shifts but I also heard from other guards that the pumping was occurring on weekends and back shifts but I never observed this happening. There did not appear to be anything secretive about the pumping. I would again emphasize that there were no covers on the lagoons during this pumping.

I only saw this pumping occur during mid and late 1978. I would say I observed lagoons F and E being pumped onto the ground about 3 times during Oct. and Nov. 1978 and always during the day. I would estimate that the water level in lagoons F and E dropped about 10 inches during these pumpings. I recall that the level in lagoon G dropped several feet the one time I saw them pump lagoon G.

The first time I saw lagoon G being pumped I wrote an irregularity report noting that a hole was in the fence and lagoon G was being pumped. After the report was reviewed, the UNC Manager of Compliance, Dale Schultz asked me to step into his office. He told me not to write any more irregularity reports on the pumping of the lagoons because it was being taken care of. He didn't expand on this any further. During this same period I asked Tom Ittelag about the pumping of lagoon G. He told me not to worry about it that the water was clean. I never asked him about F and E lagoons.

Sometime in Oct/Nov 1978 while the pumping was going on I observed a gully under the fence where the hose was pumping the water. At that time either F or E lagoons were being pumped but I don't recall which one. This hole measured about 2 ft across and about a foot deep. This was on second shift when I noticed it. I reported this finding orally to the UNC supervisor, but I can not recall who he was. He said he knew about it and told me to post a guard for the rest of the shift. I asked this supervisor if I should write an irregularity report and he told me not to because Mr. Schultz said not to. I didn't record this in the Sgt. log and I don't know if the roving guard at the time also found it and reported it. This hole remained there for about 2 days until it was filled. The end of the hose was right at the edge of the hole and the ground was wet and muddy but there was very little water coming out at the time I observed. At no other time did I ever see a hole in the fence bigger than this one as a result of the pumping of the lagoon. In fact I never saw any other washouts as a result of the pumping.

I recall that in the latter part of 1978 they started putting raincovers over the lagoons when it would rain. These covers were green in color. I recall the pump and fire hose being used to pump rain water off of the cover of lagoon G using the same set up of hoses and running the water off in the northeast corner of the fence. I never saw them pump rainwater off of lagoons F and E. This is definitely distinct from the pumping I observed in lagoons F and E.

It is my opinion that all of the Sgts. should have been aware of the pumping from the lagoons. Again I don't recall the pumping being limited to any back shift or weekends. I don't recall any other incidents of pumping the lagoons onto the ground other than these 3 or 4 times in 1978. I also recall some of the guards asking me if they should write up anything on the pumping and I told them not to write it up because it wasn't necessary. This instruction was based on what Mr. Schultz told me earlier about writing the reports on the lagoon pumping.



I have no knowledge of anyone at anytime throwing rocks, boulders, lead weights or other heavy objects through the lagoon raincovers. I also have no knowledge of anyone punching or piercing holes in any of the lagoon liners for the purpose of allowing the contents to seep into the ground.

I feel that the irregularity report I wrote on the pumping is in reference to the same hole in the fence mentioned in an irregularity report shown to me by Mr. Christopher that is dated 10-9-78. I would also point out that as a supervisor I didn't fill out any check of sheets relating to perimeter or other security conditions. I have no knowledge as to how the post guards reported the perimeter conditions during this time period of the pumping.

I have read, initialed all corrections and understand the above 7 page statement which was written by Mr. Christopher of the NRC as we discussed its contents. It is true and accurate to the best of my ability and recollection. I do not desire confidentiality in this investigation.

Leonard Mello, Jr.  
12:00 Noon 12/17/80

Subscribed and sworn to this 17th day of  
Dec 1980 at 12:00 Noon

R. K. Christopher 12/17/80  
Investigator, USNRC

IRREGULARITY REPORT

TO: CAPT D LACHAPPELLE DATE: 10-9-78 TIME: 0945  
 FROM: Sgt. K.P. KEEGAN CITY: WOODRIVER JCT, RI  
 SUBJECT: NORTH FENCE INSTALLATION: UNITED NUCLEAR (FRD)  
 NAMES OF PERSONS INVOLVED: MYSELF

DETAILS: (Who, What, Where, When, Why, How)

WHILE MAKING A 0945 ROUND I NOTICED THAT  
 WHEN THE FIRE HOSE <sup>KPK 10-9-78</sup> NOSE WAS PUT  
 THROUGH THE NORTH FENCE, A HOLE MEASURING  
 ABOUT 4 IN SQUARE WAS MADE IN THE  
 FENCE.

NOTE: THIS DEFICIENCY WAS NOTED ON AN AUDIT CONDUCTED BY D HINSEY  
 APPROX. ONE MONTH AGO AND ITS EXISTENCE IS GENERAL KNOWLEDGE  
 AMONG THE SECURITY FORCE.

THE HOLE IS TO ALLOW PUMPING FROM LAGOON TO SWIMMING POOL  
<sup>HINSEY</sup>

ACTION TAKEN:

COMMENTS: THIS HOLE SHOULD BE REPAIRED TO COMPLY  
 WITH <sup>KPK 10-9-78</sup> HAVING AN ACCEPTABLE FENCE SYSTEM

GUARD SIGNATURE: K.P. Keegan

SHIFT HOURS: \_\_\_\_\_

SUPERVISOR'S SIGNATURE: Kevin P. Keegan

D. Hinsey

EXHIBIT 10

STATEMENT OF INDIVIDUAL C

12/18/80 - 10:20 PM

I, do hereby make the following free and voluntary statement to Mr. R. Keith Christopher who has identified himself to me as an investigator with the U. S. Nuclear Regulatory Commission. Mr. Christopher is writing this statement at my request and in my presence.

I was employed as a security officer at the United Nuclear Corporation Plant in Wood River Junction, R.I. during a period of time including January through November 1978.

During the month of Nov. 1978 during the Thanksgiving week a guard on the round on first shift on Saturday called into Post A and stated that there was a hole in the fence. I don't recall who this guard was. He described the hole as being in the Northeast corner of the Protected Area boundary. Later that day I looked at the hole. The hole was located about 5 ft from the Northeast corner of the Perimeter fence. The hole was approximately 2 ft high and four feet wide. There was nothing by the hole at the time. I asked the UNC supervisor whom I believe was either Nancy Cogan or David Hemsey about the hole. I was told they had been taking rainwater off the raincovers on the lagoons. I was told not to worry about the hole that it would be taken care of.

The next weekend after I first saw the hole I went out by the lagoons and observed Robert Webber checking a pump that was located on the Northeast corner of lagoon as shown to me on a drawing maintained by the NRC. This pump was running and the suction hose was laying on the raincover of lagoon D and water was being expelled from an outlet hose the end of which was located about 5 to 10 ft from the Northeast corner of the fence and about 2 feet from the fence. This water was being pumped into the gully created under the fence that I had seen the week before.

The raincover of lagoon D that separated the rainwater from the contaminated water below the raincover was one in the same because the northern end of the raincover having sunk into the lagoon caused a mixture of the two waters. I asked Webber if he was pumping contaminated water and he said no, that the water was clean meaning not contaminated. He was referring to all the water in the lagoon and said that Tom Ittaleg (Phonetic) told him (Webber) that the water was clean as drinking water. I do not know how long the pump ran because Webber shut the pump off shortly after I got there. It is my opinion that the gully under the fence was created by the pumping of the water. I never saw the pump actually pumping again but I saw the pump in the same location the next weekend. The suction end of the hose was laying down in the lagoon water itself and the other end of the hose was bent over towards the side of the lagoon. It is my opinion that the following people were also aware of the

pumping from the lagoon. Mike Morrissey, Will Pearult, Charles Leibherr, and Steve Granier, all guards should have seen the pumping. I later talked in general about this pumping with Pearult and Morrissey. The water that was discharged from this pump was clear water. There was no separation of the water on top the raincover and under the cover. I would estimate the water level of the lagoon to have dropped 4 ft during the pumping operation. There was no other personnel present other than Webber when I observed the pumping the one time.

The gully created by the pumping and draining of the water under the fence remained there far in excess of 4 weeks into late December.

I asked Schultz, who was the acting Shift Supervisor what we were going to do about the hole, and he said he knew about it and it was going to be taken care of. He didn't say how or when. Schultz just generally told us not to worry about the hole.

While discussing these issues I have realized that I am mistaken about the time period during which I observed this pumping. I now believe that this pumping occurred in early 1978 possibly March.

Referring back to the hole under the fence it remained as described for approximately 4 weeks until it was filled. I believe UNC contracted with a man named Chamberlain to get the hole grated and filled in. It was common knowledge among the guards and supervisors that the hole was there and would be taken care of later. I never saw any other holes under the fence caused by pumping the lagoons and I never saw the lagoons pumped out onto the ground again. There were some irregularity reports written about the hole, at least one that I know of. After this report was submitted Schultz told me and the others not to write any other irregularity reports about the hole because it would be taken care of.

During the summer of 1977 lagoon B was being dug out. During this time, Frank Boyle, the janitor and Jim Wakefield, a Process Supervisor were standing about 20 feet South of (A) lagoon along what is now referred to as E lagoon. I was talking with them at the time when Boyle told Wakefield that the reason they were having seepage into the ground under lagoon B was that an individual who I think he said was Owen McCormick deliberately wadded out into the lagoon and punched holes in the liner with some type of instrument in order to get the water to seep into the ground and lower the water levels.

I assumed this happened when they had repairs made on the walls of lagoon B but I don't know when that was. There was no further specific discussion about this. I personally have no knowledge of the circumstances surrounding the lagoon being deliberately pierced and know no more about it other than what Boyle said. I know of no other individuals who know about this incident.

I know of only one instance when a cement block was thrown into a lagoon but I don't know if the cover was on the lagoon at that time. This occurred during the winter of 1978 possibly in February. This individual, a guard named Downs threw a cement block into lagoon C to see if it was frozen enough for him to walk over. Because it was frozen I do not believe there was a cover over the lagoon. I witnessed Downs do this at the time. I know of no other instances in which any individual threw any rocks, boulders, lead weights or other heavy objects into the lagoons in order to deliberately tear the covers.

In addition, I would also add that Russel Lacey, another guard was also familiar with the pumping of lagoon D.

In reference to the pumping incident it is my opinion that Robert Webber felt he was pumping non-contaminated water based on what information from Tom Ittleg who apparently sampled the water.

I have no way of knowing whether the water pumped out to the fence area was actually contaminated or not.

I have read, initialled all corrections and understand the above nine page statement which was written by Mr. Christopher of the NRC as we discussed its contents. It is true and accurate to the best of my ability and recollection.

(Signature) 12/19/80 12:40 AM

Subscribed and sworn to this 19th day of Dec. 1980 at 12:40 AM

R. Keith Christopher 12/19/80 12:40 AM  
Investigator, USNRC

Witness.

Jerome Roth, Fuel Facility Inspector, USNRC 12/19/80 12:41 AM

NOTE: Information in the above statement which would disclose the identity of Individual C has been deleted or paraphrased in accordance with 10 CFR 9.

EXHIBIT 11

STATEMENT OF INDIVIDUAL E

December 16, 1980

I, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the U.S. Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. I was employed at the United Nuclear Corporation facility at Wood River Junction, RI, for a period of time including September 1977 through December 1978.

I have no knowledge of any operation involving the pumping of rainwater from the top of the lagoon covers. I have no knowledge of anyone punching holes in or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground or for any other reason. I have no knowledge of anyone pumping the waste contents or contaminated material in a lagoon onto the ground during 1978 or at any other time. I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoons or thru lagoon covers. I have no knowledge of any holes or opening under the Protected Area fence that may have been associated with any pumping of liquid in the lagoon area.

I have read the foregoing statement consisting of two handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page at the bottom. This statement is the truth to the best of my knowledge and belief.

(Signature) 12/16/80 1620 hours

Subscribed and sworn to before me this sixteenth day of  
December 1980.

Raymond E. Shepherd 12/16/80 1621 hours

Witnessed:

R. Keith Christopher, Investigator, RI, NRC

NOTE: Information in Individual E's statement which would disclose his identity has been deleted or paraphrased in accordance with 10 CFR 9.

Information in Individual E's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-320/80-23.

EXHIBIT 12

STATEMENT OF ALFRED A. DIRAIMO

DATE: 12/17/80

I, Alfred A. DiRaimo, do hereby make the following free and voluntary statement to Mr. R. K. Christopher, who has identified himself to me as an Investigator for the U.S. Nuclear Regulatory Commission. I make this statement with no threats having been made against me or promises extended to me. I was employed at the UNC plant at Wood River Junction as a Security Officer for the Wackenhut Corp. from Sept. 1977 to Sept. 1978.

I have no knowledge of any operation involving the pumping of rainwater from the top of the lagoon covers at Wood River Junction. I have no knowledge of anyone punching holes in or cutting the lagoon liners for the purpose of having the lagoon contents seep into the ground or for any other reason. I have no knowledge of anyone pumping the contents of a lagoon onto the ground during 1978 or any other time. I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoon rain covers. I have no knowledge of any holes or openings under the Protected Area fence that may have been associated with any pumping of liquid in the lagoon area.

I have read, initialed all corrections and understand the above two page statement which was written by Mr. Christopher as we discussed its contents.

(Signature) Alfred A. DiRaimo  
17 Dec. 80

Witness:  
R. K. Christopher 12/17/80

EXHIBIT 13

STATEMENT OF ROBERT L. HAMPTON

DATE: 12-18-80

TIME: 0935

I, Robert L. Hampton, do hereby make the following free and voluntary statement to Mr. R. K. Christopher, who has identified himself to me as an Investigator for the U.S. Nuclear Regulatory Commission. I make this statement with no threats having been made against me or promises extended to me.

I was employed as a Security Officer by the Wackenhut Corp. at the UNC Wood River Junction plant in Wood River, RI. I became a Sgt. in the latter part of 1978. I worked at this site from Jan. 1978 to June 1979. During this period I worked approximately 60-70 hrs. a week on random shifts and random times.

I have no knowledge of any operation involving the pumping of waste material or contaminated material during 1978 or any other time out onto the open ground. I recall rainwater being pumped off the top of the lagoon covers but I can't recall where it was pumped to. I am sure they did not pump any material from under the raincovers onto the open ground.

I have no knowledge of anyone punching holes in or cutting the lagoon liners for the purpose of having the lagoon contents seep into the ground or to permit seepage from the lagoon.

I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoons or through the raincovers. I have no knowledge of any holes or openings under the Protected Area fence that may have been associated with any pumping of liquid in the lagoon area.

Based on the amount of time I spent at the plant and on the different shifts I know of no way they could have done any pumping as described without my knowing.

I have read, initialed all corrections and understand the above 2 page statement which was written by Mr. Christopher as we discussed its contents.

(Signature) Robert L. Hampton  
12/18/80

Subscribed and sworn to this 18th  
day of Dec. 1980 at 10:15 AM

R. K. Christopher, USNRC  
12/18/80



EXHIBIT 14

STATEMENT OF DALE M. SCHULTZ

DATE: 12-18-80

TIME: 1711

I, Dale M. Schultz, do hereby make the following free and voluntary statement to Mr. R. K. Christopher, who has identified himself to me as an Investigator for the U.S. Nuclear Regulatory Commission. I make this statement with no threats having been made against me or promises extended to me. I was Manager of Compliance (which included Security) at the UNC Plant in Wood River Junction from Jan. 1977 to Nov. 1978. From Nov. 78 to Dec. 1980 my job assignment did not include security. I have no knowledge of anyone punching holes in or cutting the lagoon liners for the purpose of having the lagoon contents seep into the ground or to permit seepage from the lagoon. I have no knowledge of anyone pumping waste or contaminated material from the lagoons into open ground during 1978 or any other time. I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoons or through the lagoon raincovers.

I also have no knowledge of any holes or openings created under the Protected Area fence that may have been associated with any pumping of liquid in the lagoon area. In reference to a statement made by Leonard Mello that I told him not to write an irregularity report on a hole in the North side of the Perimeter fence, I would say that if I did tell him that, it was because the hole, which measured 4" by 4" had been there for several months and was small enough to be within regulatory limits. This hole was used to run a fire hose from the lagoons to the swimming pool on the north side.

I have no knowledge of Leonard Mello being instructed not to write an irregularity report on a hole under the fence in the Northeast corner. I would say that what the UNC supervisor told him was correct in that I had instructed the Supervisors not to write redundant irregularity reports on holes in the rear fence because it was a repetitive problem that was identified and routinely handled by maintenance. I would state that I have no knowledge of any erosion holes being caused by the pumping of the lagoons under the Protected Area fence. I am aware that rainwater was periodically pumped out of the lagoon raincovers. I am not familiar with where the rainwater was pumped to each time. To the best of my knowledge the rainwater was always tested before it was pumped out.

I also know lagoon G was pumped out several times before waste effluent entered it but I am not sure exactly where this water was pumped to.

I have read, initialed all corrections and understand the above four page statement which was written by Mr. Christopher at my request as we discussed its contents. It is true and accurate to the best of my ability and recollection. I have no objection to being identified in this investigation or its subsequent report.

End of Statement  
Dale M. Schultz 12/18/80

Subscribed and sworn to this 18th  
day of Dec. 1980 at 1515

R. K. Christopher 12/18/80 1515  
Investigator, USNRC

Witness:

Raymond E. Shepherd, Investigator, Region I, USNRC 12/18/80 5:16 PM

EXHIBIT 15

STATEMENT OF DONALD B. DOWNS

DATE: 1/13/81

TIME: 10:40

I, Donald B. Downs, do hereby make the following free and voluntary statement to Mr. R. K. Christopher, who has identified himself to me as an Investigator for the U.S. Nuclear Regulatory Commission. I make this statement with no threats having been made against me or promises extended to me.

I was employed as a security officer by the Wackenhut Corp. at the UNC Wood River Junction Plant from July 24, 1975 to July 24, 1978. I worked approximately 70 hours a week primarily on the 11:00 PM to 7:00 AM shift and on weekends.

I have no knowledge of any operation involving the pumping of rainwater from the top of the lagoon covers or of pumping of lagoon waste material directly from the lagoons out into the open areas in the Northeast corner of the Perimeter fence.

I have no knowledge of anyone punching holes in or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground or to permit seepage of lagoon waste material.

I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoons or through the lagoon rainovers. I have personally never thrown anything into the lagoons and never through anything into a lagoon that was frozen to see if I could walk on it.

I have no knowledge of any holes or openings under the Protected Area fence that may have been associated with any pumping of liquid in the lagoon area.

I have read, initialed all corrections and understand the above two page statement which was written by Mr. Christopher of the NRC as we discussed its contents. It is true and accurate to the best of my ability and recollection.

(Signature) Donald B. Downs

1/13/81 Time: 11:05

Subscribed and sworn to this 13th day of  
Jan 1981 at 11:05 AM

R. K. Christopher 1/13/81  
USNRC 11:05 AM

EXHIBIT 16

STATEMENT OF ROBERT E. WHITE

DATE: 1/13/81  
TIME: 2020

I, Robert E. White, do hereby make the following free and voluntary statement to Mr. R. K. Christopher, who has identified himself to me as an Investigator for the U.S. Nuclear Regulatory Commission. I make this statement with no threats having been made against me or promises extended to me. I was employed as a Security Guard by the Wackenhut Corporation at the UNC Plant in Wood River Junction, RI from about April 1977 until July of 1979 when Interstate Security took over for Wackenhut. This was a part time position in which I worked 16 hrs on the weekends. Usually this was a day shift on Saturdays and an afternoon shift on Sundays.

I have no knowledge of any operation involving the pumping of rainwater from the top of the lagoon covers. I have no knowledge of anyone punching holes in or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground or to permit seepage from the lagoons. I have no knowledge of anyone pumping the waste contents or contaminated material in a lagoon out onto the ground in 1978 or any other time.

I can state without question that at no time did I ever observe a hole under the fence in the Northeast corner of the Perimeter fence. I checked that area every weekend and if I was a roving guard it was checked at least every other hour.

I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoons or through the lagoon raincovers. However, I recall on several occasions that there were small rocks on top of the ice during the winter. This was in either the winter of 1977 or 1978. I don't recall whether these rocks broke the ice or not and I didn't pay any attention to it.

I have read, initialed all corrections and understand the above two page statement which was written by Mr. Christopher as we discussed its contents. It is true to the best of my ability and recollection.

(Signature) Robert E. White 1/13/81 2020

Subscribed and sworn to this 13th day of  
Jan 1981 at 8:20 PM

R. K. Christopher, USNRC 1/13/81 8:20 PM

EXHIBIT 17

STATEMENT OF INDIVIDUAL F

DATE: 1/14/81  
TIME: 1125 hrs.

I, do hereby make the following free and voluntary statement to Mr. R. K. Christopher, who has identified himself to me as an Investigator for the U.S. Nuclear Regulatory Commission. I make this statement with no threats having been made against me or promises extended to me.

I was employed as a guard at the UNC/FRO plant by the Wackenhut Corp. during a period including May 1977 through December 1978. During this period I worked an average of 50 hours on all shifts including weekends.

I have no knowledge of any operation involving the pumping of rainwater from the top of the lagoon covers. I have no knowledge of anyone punching holes in or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground or to permit the seepage of lagoon waste material.

I have no knowledge of anyone pumping the waste contents or contaminated material during 1978 or at any other time from a lagoon onto the ground.

I have no knowledge of anyone throwing rocks, boulders, or lead weights or other heavy objects into the lagoons or through the lagoon rain covers.

I have no knowledge of any holes or openings under the protected area fence that may have been associated with any pumping of liquids from the lagoons.

I have read, initialed all corrections and understand the above 2 page statement which was written by myself as I discussed its contents with Mr. Christopher of the NRC and it is true and accurate to the best of my ability and recollection.

For protection of my family, I request my name not be used in any report distributed to the public.

(Signature)  
1/14/81 1145 hrs.

Subscribed and sworn to this 14th day of  
Jan 1981 at 11:45 AM

R. K. Christopher  
1/14/81 11:45 AM

NOTE: Information in Individual F's statement which would disclose his identity has been deleted or paraphrased in accordance with 10 CFR 9.

EXHIBIT 18

STATEMENT OF JAMES H. WAKEFIELD

United Nuclear Corporation Recovery Systems  
Wood River Junction, Rhode Island  
December 4, 1980 1:30 p.m.

I, James H. Wakefield, make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. Beginning in early June 1980 I was Production Supervisor during the lagoon processing operation at United Nuclear Corporation (UNC), Wood River Junction, Rhode Island and reported to Mr. Charles Bowers.

Around January or February 1978, operations and maintenance personnel at the UNC site were involved in pumping rainwater from the top of the lagoon covers and the rainwater was pumped or discharged outside the protected area fence. I did not observe the actual pumping and discharge of rainwater from the top of the lagoon covers but such pumping and discharge of rainwater was discontinued when the lagoon cover on any lagoon was ripped or damaged in such a way that the rainwater commingled with the contents of a lagoon. I have no knowledge of any pumping and discharge of lagoon sludge or other contents in a lagoon to the surface of the ground when the rainwater on top of the lagoon covers was being discharged. I have no knowledge of any erosion of soil or openings under the protected area fence which resulted from the pumping of rainwater from the top of the lagoon covers and which degraded the security of the fence in such a way that a person could crawl through the opening under the fence. I have no knowledge of anyone punching holes in lagoon liners for the purpose of having the lagoon contents seep into the ground.

I have read the foregoing statement consisting of three (3) handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

(Signature)

James H. Wakefield 1352 hrs.

Subscribed and sworn to before me this fourth day of  
December 1980 at United Nuclear Corporation Recovery Systems,  
Wood River Junction, Rhode Island

Raymond E. Shepherd 12/4/80

Witnessed:

William W. Kinney, Fuel Facility Inspector, USNRC 12/4/80

NOTE: Information in Wakefield's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-820/80-23.

EXHIBIT 19

STATEMENT OF INDIVIDUAL G

December 5, 1980

I, make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I am presently employed at United Nuclear Corporation Recovery Systems, Wood River Junction, Rhode Island. I had no involvement in any operation at UNC which involved the pumping of rainwater from the top of the lagoon covers onto the ground adjoining the lagoon area. I have no knowledge of any pumping of lagoon contents onto the ground adjoining the lagoon area and I never saw any holes or openings under the fence around the lagoon area which were associated with the pumping of rainwater from the top of the lagoon covers. I have no knowledge of anyone punching holes in the lagoon liners for the purpose of having the lagoon contents seep into the ground. For personal reasons, I must ask that the NRC extend as much confidentiality as possible to me in this matter.

I have read the foregoing statement consisting of two (2) handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge, recollection and belief.

(Signature) 1400 hours

Witnessed:

Raymond E. Shepherd, Investigator, U.S. Nuclear Regulatory Commission 12/5/80

William W. Kinney, Fuel Facility Inspector, USNRC 12/5/80

NOTE: Information in Individual G's statement which would disclose his identity has been deleted or paraphrased in accordance with 10 CFR 9.

Information in Individual G's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-820/80-23.



EXHIBIT 20

STATEMENT OF INDIVIDUAL H

December 5, 1980 9:05 a.m.

I, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. I am presently employed by United Nuclear Corporation Recovery Systems (UNC), Wood River Junction, Rhode Island. Mr. Shepherd is writing this statement for me at my request. For personal reasons, I must ask that the NRC extend as much confidentiality as possible to me in this matter.

I have no first hand knowledge of rainwater being pumped from the top of the lagoon covers onto the ground near the protected area fence at the UNC facility during 1978 or at any other time. I did not see any holes or openings under the protected area fence resulting from rainwater or any other material being pumped from the top of the lagoon covers onto the ground near the fence. I have no knowledge of any pumping of lagoon sludge or liquid material from the lagoons onto the ground near the protected area fence at the UNC facility during 1978 or at any other time. I have no knowledge of anyone punching holes in or damaging or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground. Approximately five (5) years ago I took four (4) or five (5) core samples from lagoon B by inserting a pipe, measuring about three (3) feet long and one and one half inches (1 1/2") diameter into the surface of the lagoon at various locations where the depth of the lagoon was approximately four (4) feet deep. At no time did I insert the pipe more than three (3) feet into the lagoon surface nor did I contact the lagoon liner when taking such samples. I feel that anyone who is not knowledgeable in the method I was using to take the above core samples and who may have seen me or other UNC operations personnel taking such samples could have mistakenly thought that the pipe which we used to take the core samples was being used to punch holes in the lagoon liners, which was not the case.

I have read the foregoing statement consisting of three (3) handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

(Signature) 0945

Witnessed:

Raymond E. Shepherd, Investigator, U.S. Nuclear Regulatory Commission 12/5/80

William W. Kinney, Fuel Facility Inspector, USNRC 12/5/80

NOTE: Information in Individual H's statement which would disclose his identity has been deleted or paraphrased in accordance with 10 CFR 9.

Information in Individual H's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-820/80-23.

EXHIBIT 21

STATEMENT OF INDIVIDUAL I

December 9, 1980 9:30 a.m.

I, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I am currently employed at UNC. Approximately two (2) years ago, around February or March, I recall that UNC operations people had pumped rainwater from lagoon G onto the ground area near the northeast corner of the UNC protected area. At the time of the above pumping operation, lagoon G had not yet been used to hold process material. I helped to set up equipment that was used for the above pumping operation. The rainwater which was pumped from lagoon G was discharged onto the ground through a fire hose, measuring about 2 1/2 inches in diameter, which was connected to the pump. The fire hose was not placed under the protected area fence, to the best of my knowledge but was placed within the protected area approximately six (6) feet from the protected area fence and about twenty-five (25) feet from the northeast corner of the fence. I do not recall seeing any holes or openings under the fence resulting from soil erosion that may have been caused by the above pumping operation. I did not participate in nor see anyone pump rainwater from the top of any lagoon covers. I have no knowledge of any pumping of lagoon sludge or liquid material from the lagoons onto the ground during 1978 or at any other time. I have no knowledge of anyone punching holes in, damaging or cutting lagoon liners for the purpose of having lagoon contents seep into the ground or for any other reason. With regard to the pumping of rainwater from lagoon G, as I mentioned above, I would estimate that the level of the rainwater in lagoon G was lowered by about four (4) or five (5) feet by the above pumping process. I have no knowledge of anyone throwing rocks, boulders or lead weights into or through the lagoon raincovers.

I have read the foregoing statement consisting of three (3) handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge.

For personal reasons, I must ask that the NRC extend as much confidentiality as possible to me in this matter.

(Signature) 10:57 A.M.

Witnessed:

Raymond E. Shepherd, Investigator, U.S. Nuclear Regulatory Commission 12/9/80

Jerome Roth, Fuel Facilities Inspector, U.S. Nuclear Regulatory Commission 12/9/80

NOTE: Information in Individual I's statement which would disclose his identity has been deleted or paraphrased in accordance with 10 CFR 9.

Information in Individual I's statement which concerns a separate NRC investigation unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report 70-820/80-23.

EXHIBIT 22

STATEMENT OF KARL HELGESON

United Nuclear Corporation Recovery  
Systems  
Wood River Junction, Rhode Island  
December 9, 1980 2:20 p.m.

I, Karl Helgeson, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I have been employed at United Nuclear Corporation Recovery Systems (UNC), Wood River Junction, Rhode Island since September 1976 and am currently employed at UNC as Manager of Nuclear and Industrial Safety.

My records show that about two (2) feet of rainwater was pumped from lagoon G around March or April 1978 and the rainwater was discharged through a fire hose to an area near the protected area fence on the east side of the UNC protected area. At the time of the above pumping operation lagoon G had not been used to contain waste material from the process building. The rainwater was discharged on the ground near the northeast corner of the protected area at a location which is in the immediate area of a light pole adjacent to lagoon D. The discharged rainwater disturbed the soil near the fence, making it a little muddy, but there was no gap created between the fence and the ground as a result of the pumping operation. I know of no instance where lagoon contents, other than the rainwater in lagoon G as mentioned above, was pumped onto the ground. All pumping of rainwater from the top of the lagoon covers was done during the day shift (from 7:30 a.m. to 4:30 p.m.) because there was no health physics coverage during the off shifts and it would be necessary for operations personnel to obtain approval from health physics personnel before performing any rainwater pumping operation. I have no knowledge of anyone punching holes in, damaging or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground or for any other reason. I have no knowledge of anyone heaving rocks, boulders, lead weights or other large objects into the lagoons or through the lagoon rain covers.

I have read the foregoing statement consisting of three (3) handwritten pages I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge.

(Signature) Karl A. Helgeson 1517 hours

Subscribed and sworn to before me this ninth day of  
December 1980 at United Nuclear Corporation Recovery  
Systems, Wood River Junction, Rhode Island

Raymond E. Shepherd 12/9/80

Witnessed:

Jerome Roth, Fuel Facilities Inspector, RI, NRC 12/9/80

NOTE: Information in Helegson's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-870/80-23.

EXHIBIT 23

STATEMENT OF INDIVIDUAL J

December 10, 1980 11:43 a.m.

I, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I am presently employed at the United Nuclear Corporation (UNC) facility at Wood River Junction, Rhode Island. For personal reasons, I must ask that the NRC extend as much confidentiality as possible to me in this matter. I recall that, approximately during the Spring of 1978, operations personnel at UNC were involved in pumping rainwater from the top of the lagoon covers in the area of lagoons C, D, E, F and G. To the best of my knowledge the rainwater was discharged from the lagoon or lagoons directly onto the ground area immediately adjoining the lagoon area on the east side of the lagoon area near the northeast corner of the protected area. The discharged rainwater seeped into the ground and some of it passed under the protected area fence and went approximately three (3) or four (4) feet beyond the fence. I had occasion to see UNC health physics personnel measure the conductivity of three (3) or four (4) samples of the rainwater that was discharged from the top of the lagoon covers.

Sometime after the Spring of 1978, I saw operations personnel pump rainwater from lagoon G, which had a liner installed in it, but lagoon G had not yet been used to hold process material. Approximately six (6) feet of rainwater was pumped from lagoon G onto the ground in the same general area as described above. It took approximately less than one week to pump the rainwater from lagoon G. All pumping of rainwater from lagoon G, as described above, and all pumping of rainwater from the top of the lagoon covers would have to have occurred during the day shift because any pumping of rainwater would have to be approved by someone in authority in the Health Physics department. There was no pumping of rainwater from the lagoon area during any offshift hours when I was onsite. I have no knowledge of anyone punching holes in or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground or for any other reason. I have no knowledge of anyone pumping the contents of process waste from a lagoon onto the ground during 1978 or at any other time. I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into a lagoon or through the lagoon raincovers. I have no knowledge of any holes or openings under the protected area fence that may have been associated with any pumping of liquid in the lagoon area.

I have read the foregoing statement consisting of four (4) handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

(Signature) 12:32 P.M.

Subscribed and sworn to before me this tenth day of December 1980.

Raymond E. Shepherd, Investigator

Witnessed:

Jerome Roth, Fuel Facilities Inspector, RI, NRC 12/10/80

NOTE: Information in Individual J's statement which would disclose his identity has been deleted or paraphrased in accordance with 10 CFR 9.

Information in Individual J's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-820/80-23.



EXHIBIT 24

STATEMENT OF NICHOLAS VUONO

United Nuclear Corporation Recovery  
Systems  
Wood River Junction, Rhode Island  
December 10, 1980 10:06 a.m.

I, Nicholas Vuono, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I have been employed at the United Nuclear Corporation (UNC) at Wood River Junction, Rhode Island since May 1969 and am presently employed at UNC as a Health Physics Technician.

I have no first-hand knowledge of any operation involving the pumping of rainwater from the top of the lagoon covers. I have no knowledge of anyone punching holes in or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground or for any other reason. I have no knowledge of anyone pumping the contents of a lagoon onto the ground. I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoons or through the lagoon covers. I have no knowledge of any holes or openings under the protected area fence that may have been associated with any pumping of liquid in the lagoon area.

I have read the foregoing statement consisting of two (2) handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

(Signature) Nicholas Joseph Vuono 10:46 AM

Subscribed and sworn to before me this tenth day of December 1980 at United Nuclear Corporation Recovery Systems, Wood River Junction, Rhode Island

Raymond E. Shepherd, Investigator

Witnessed:

Jerome Roth, Fuel Facilities Inspector, RI, NRC 12/10/80

NOTE: Information in Vuono's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-820/80-23.

EXHIBIT 25

STATEMENT OF INDIVIDUAL K

December 10, 1980 8:43 a.m.

I, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I am presently employed at the United Nuclear Corporation (UNC) facility at Wood River Junction, Rhode Island. For personnel reasons, I must ask that the NRC extend as much confidentiality as possible to me in this matter.

I have no knowledge of any operation involving the pumping of rainwater from the top of the lagoon covers. I have no knowledge of anyone punching holes in or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground or for any other reason. I have no knowledge of anyone pumping the contents of a lagoon onto the ground. I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoons or through the lagoon raincovers. I have no knowledge of any holes or openings under the protected area fence that may have been associated with any pumping of liquid in the lagoon area.

I have read the foregoing statement consisting of two (2) handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

(Signature) 0927

Subscribed and sworn to before me this tenth day of December 1980 at United Nuclear Corporation Recovery Systems, Wood River Junction, Rhode Island

Raymond E. Shepherd, Investigator 12/10/80

Witnessed:

Jerome Roth, Fuel Facilities Inspector, RI, NRC 12/10/80

NOTE: Information in Individual K's statement which would disclose his identity has been deleted or paraphrased in accordance with 10 CFR 9.

Information in Individual K's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-820/80-23.

EXHIBIT 26

STATEMENT OF INDIVIDUAL L

December 16, 1980 1:28 p.m.

I, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I am presently employed at the United Nuclear Corporation (UNC) facility at Wood River Junction, Rhode Island. For personal reasons, I must ask that the NRC extend as much confidentiality as possible to me in this matter.

I was aware that UNC management had planned to pump rainwater from the top of the lagoon covers sometime in 1978 but I did not have any direct involvement in that operation and never saw the rainwater pumping operation and do not know if the plan was ever carried out. I have no knowledge of anyone punching holes in, or piercing or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground or for any other reason. I have no knowledge of anyone pumping the waste contents or contaminated material in a lagoon onto the ground during 1978 or at any other time. I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoons or through the lagoon raincovers. I have no knowledge of any holes or openings under the protected area fence that may have been associated with the pumping of liquid in the lagoon area.

I have read the foregoing statement consisting of two handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

(Signature) 2:10

Subscribed and sworn to before me this sixteenth day of December 1980 at United Nuclear Corporation Recovery Systems, Wood River Junction, R.I.

Raymond E. Shepherd 12/16/80

Witnessed:

R. Keith Christopher, Investigator, Region I, NRC 12/16/80

NOTE: Information in Individual L's statement which would disclose his identity has been deleted or paraphrased in accordance with 10 CFR 9.

Information in Individual L's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-820/80-23.

EXHIBIT 27

STATEMENT OF INDIVIDUAL M

December 16, 1980 10:05 a.m.

I, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I am presently employed at the United Nuclear Corporation (UNC) facility at Wood River Junction, Rhode Island. For personal reasons, I must ask that the NRC extend as much confidentiality as possible to me in this matter.

I recall that sometime during 1978, I was involved in pumping of rainwater from lagoon G at the UNC site and this occurred before lagoon G had been used to contain any waste material at all. The above rainwater was pumped from lagoon G onto the ground in the immediate vicinity of the lagoon area and the level of rainwater in lagoon G was lowered at least four (4) to six (6) feet by this pumping operation. The rainwater discharged from lagoon G caused some accumulation of water on the ground adjoining the lagoon area and thereby created some puddles, no deeper than three (3) or four (4) inches, both inside and outside the protected area fence on the east side of the UNC site, at a location which was approximately twenty (20) to thirty (30) feet south of the northeast corner of the fence. The rainwater discharged from lagoon G also caused some erosion of the soil under the fence at the above location and I would estimate that such erosion may have left a space between the bottom of the fence and the ground which measured no more than four (4) inches high and no more than two (2) feet wide. Whenever such erosion occurred, UNC operations personnel closed up the space beneath the fence by filling the space with dirt, before completing the pumping operation on any given day. The pumping of rainwater from lagoon G was a continuing operation that lasted approximately two months. I also recall seeing the pumping of some rainwater from the top of lagoon cover, which I believe were the covers on lagoons F and G, and this occurred around the same general time that rainwater was pumped from lagoon G. The rainwater pumped from the top of the covers on lagoons F and G was also discharged onto the ground adjoining the lagoon area and any pumping of rainwater from the lagoon covers less erosion of the soil under the protected area than was caused when we pumped rainwater from lagoon G. I have no knowledge of anyone punching holes in or cutting or piercing lagoon liners for the purpose of having the lagoon contents seep into the ground or for any other reason. I have no knowledge of anyone pumping waste material or contaminated material in a lagoon onto the ground. I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoons or through the lagoon raincovers.

I have read the foregoing statement consisting of four handwritten pages, including the following page where I have signed my name. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

To the best of my knowledge, there was never any pumping of rainwater from lagoon G, as described above, or from the top of the lagoon covers on lagoons F and G during holidays or during the second and third work shifts. The second work shift hours were approximately 4:00 p.m. to midnight. The third work shift hours were approximately midnight to 8:30 a.m.

(Signature) 11:12 AM

Subscribed and sworn to before me this sixteenth day of December 1980 at United Nuclear Corporation Recovery Systems, Wood River Junction, Rhode Island.

Raymond E. Shepherd 12/16/80

Witnessed:

R. Keith Christopher, Investigator, RI, NRC 12/16/80 11:14 AM

NOTE: Information in Individual M's statement which would disclose his identity has been deleted or paraphrased in accordance with 10 CFR 9.

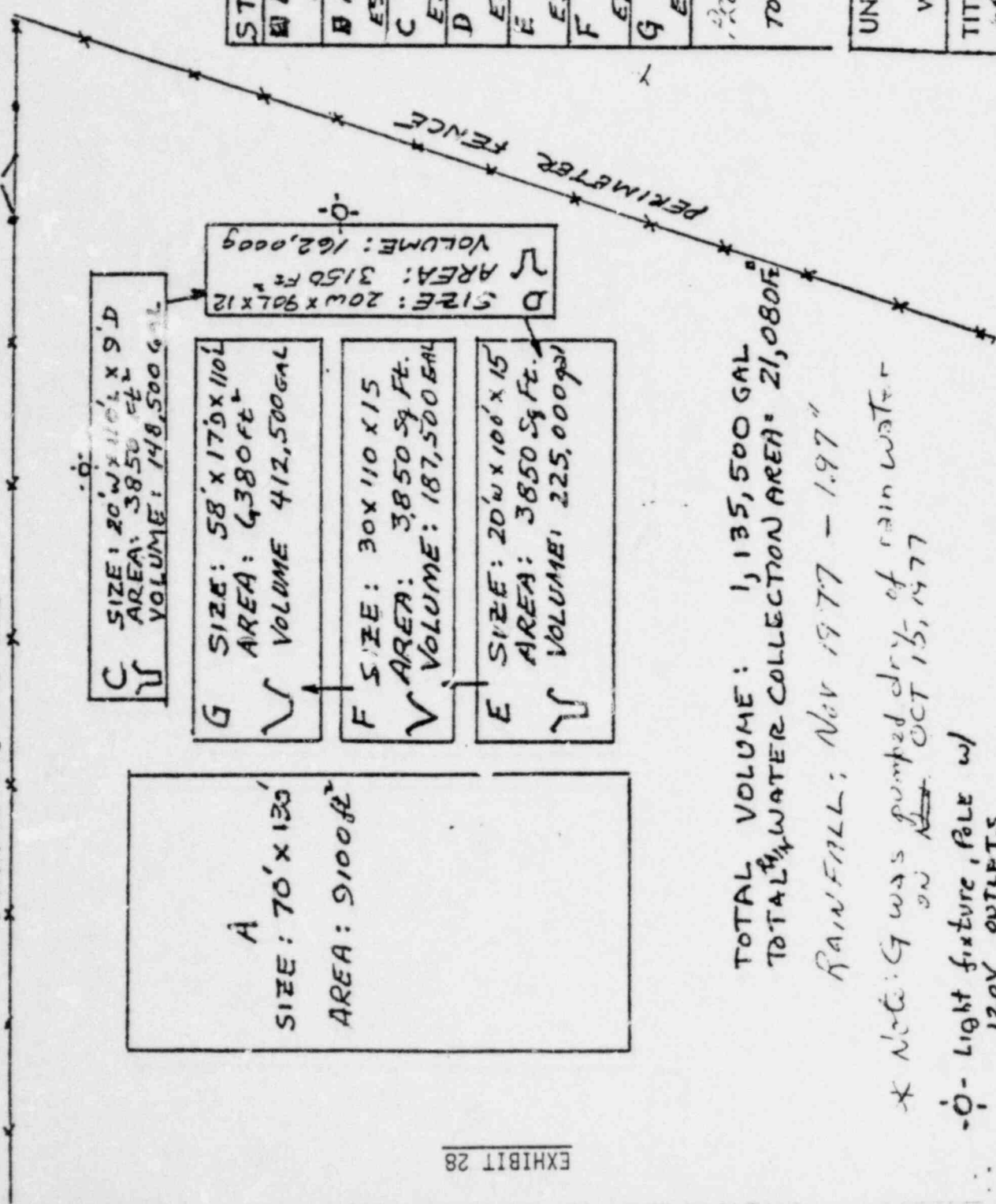
Information in Individual M's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-820/80-23.

see 11/14/77 1258

N

VEHICLE GATE

PERIMETER FENCE



STATUS REPORT	
DATE:	12-5-77
EST. VOL. AVAILABLE	
B	12 inch w/ front end
EST. VOL. AVAIL.	200,000 gal
C	FULL
EST VOL AVAIL.	NONE
D	FULL - COVERED
EST VOL AVAIL.	NONE
E	FULL
EST. VOL AVAIL.	NONE
F	FULL - COVERED
EST VOL AVAIL.	NONE
G	100% FULL COVERED
EST VOL. AVAIL.	200,000
REV	OCT 11, 1977
TOTAL VOL. AVAILABLE	452,000 gal
	200,000 gal. est.

UNITED NUCLEAR CORPORATION FUELS RECOVERY PLANT WOOD RIVER JUNCTION, R. I.	
TITLE: FRO LAGOONS INSTALLED 6-1-77	
DATE: 12-12-77	SK-713
REV. D	

TOTAL VOLUME: 1,135,500 GAL  
 TOTAL WATER COLLECTION AREA: 21,080 sq ft

RAINFALL: Nov 1977 - 1.97"

\* Note: G was pumped dry of rain water on OCT 15, 1977

-O- Light fixture, pole w/ 120V outlets

NOTE: AREA SHOWN IS MEASURED AT TOP OF BANK TO INDICATE SIZE OF WATER SHED  
 CROSS SECT. PROFILE SHOWN UNDER LETTER DESIGNATION.

EXHIBIT 29

STATEMENT OF INDIVIDUAL N

I, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I am presently employed at the United Nuclear Corporation (UNC) facility at Wood River Junction, Rhode Island. For personal reasons, I must ask that the NRC extend as much confidentiality as possible to me in this matter.

I have no knowledge regarding any of the allegations against UNC operations at Wood River Junction, Rhode Island as were described in an article published in the Charlestown Times, dated November 26, 1980 and entitled "Was it Pumped to Open Ground; 2 UNC Workers."

I have read the foregoing statement consisting of two (2) handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

(Signature) 12/17/80 1137 AM

Witnessed:

Raymond E. Shepherd, Investigator, Region I, NRC 12/17/80 11:38 AM

NOTE: Information in Individual N's statement which would disclose his identity has been deleted or paraphrased in accordance with 10 CFR 9.

Information in Individual N's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-820/80-23.

EXHIBIT 30

STATEMENT OF ROBERT J. GREGG

United Nuclear Corporation Recovery  
Systems  
Wood River Junction, Rhode Island  
December 17, 1980

I, Robert J. Gregg, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I have been employed at the United Nuclear Corporation (UNC) facility at Wood River Junction, Rhode Island since December 1977 and am presently employed at the above UNC facility as Plant Manager.

I never saw any pumping of rainwater from the top of lagoon covers but was aware that this was being done, approximately in early 1978. I have no knowledge of anyone punching holes in, piercing or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground or for any other reason.

I have no knowledge of anyone pumping the waste contents or contaminated material in any lagoon onto the ground during 1978 or at any other time. I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoons or through the lagoon raincovers. I have no knowledge of any holes or openings under the protected area fence that may have been associated with any pumping of liquid in the lagoon area. I have no objection to the NRC using my name as the source of the information contained in this statement.

I have read the foregoing statement consisting of two (2) handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

(Signature) 3:02 PM 12/17/80  
Robert J. Gregg

Subscribed and sworn to before me this seventeenth day of December 1980 at United Nuclear Corporation Recovery Systems, Wood River Junction, Rhode Island.

Raymond E. Shepherd, Investigator

Witnessed:

Jerome Roth, Fuel Facilities Inspector, Region I, NRC 12/17/80 3:06 PM

NOTE: Information in Gregg's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-820/80-23.



EXHIBIT 31

STATEMENT OF CHARLES E. BOWERS

United Nuclear Corporation Recovery  
Systems  
Wood River Junction, Rhode Island  
December 17, 1980

I, Charles E. Bowers, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I was employed as General Manager - President of United Nuclear Corporation (UNC) Recovery Systems, Wood River Junction, Rhode Island from December 1974 to December 1980 and am presently employed as General Manager - President of Nickel Battery Division of Yardney Electric Corporation, Pawcatuck, Connecticut. I have no objection to the NRC using my name as the source of the information contained in this statement.

I have no knowledge of anyone punching holes in or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground. I have no knowledge of anyone pumping the waste contents or contaminated material in any lagoon onto the ground during 1978 or at any other time. I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoons or through the lagoon covers. I have no knowledge of any holes or openings or spaces under the protected area fence that may have been associated with any pumping of liquid in the lagoon area for the purpose of contaminated liquid waste disposal.

I have read the foregoing statement consisting of two (2) handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

(Signature) 12/17/80 5:00 PM  
Charles E. Bowers

Subscribed and sworn to before me on this seventeenth day of December 1980 at United Nuclear Corporation Recovery Systems, Wood River Junction, Rhode Island.

Raymond E. Shepherd 12/17/80 5:02 PM

Witnessed:

Jerome Roth, Fuel Facilities Inspector, Region I, NRC 12/17/80 5:03 PM

NOTE: Information in Bower's statement which concerns a separate NRC investigation, unrelated to this investigation, has been deleted and will be reported in NRC Investigation Report No. 70-820/80-23.

EXHIBIT 32

STATEMENT OF FRANCIS J. BOYLE, 12/18/80

United Nuclear Corporation Recovery  
Systems  
Wood River Junction, Rhode Island  
December 18, 1980

I, Francis J. Boyle, hereby make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I hereby give permission to the NRC to use my name as the source of the information contained in this statement. I have been employed at the United Nuclear Corporation facility in Wood River Junction, Rhode Island since 1964 and am presently employed at this facility doing maintenance work. I have no knowledge of any operation involving the pumping rainwater from any lagoon or from the top of any lagoon covers. I have no knowledge of anyone punching holes in, piercing or cutting lagoon liners for the purpose of having the lagoon contents seep into the ground or for causing any leakage of lagoon contents. I have no knowledge of anyone pumping the waste contents or contaminated material in any lagoon onto the ground at any time. I have no knowledge of anyone throwing rocks, boulders, lead weights into the lagoons or through the lagoon rain covers. I have no knowledge of any holes, openings or spaces under the protected area fence that may have been associated with any pumping of liquid in the lagoon area. I can not recall ever discussing with any member of the security force at the above facility any pumping of liquid in the lagoon area at any time.

I have read the foregoing statement consisting of two (2) handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

(Signature) 12/18/80 10:45  
Francis J. Boyle

Witnessed:

Raymond E. Shepherd, Investigator, Region I, NRC 12/18/80 10:46 AM  
R. Keith Christopher, Investigator, Region I, NRC 12/18/80 10:46 AM

EXHIBIT 33

STATEMENT OF FRANCIS J. BOYLE, 1/31/81

United Nuclear Corporation Recovery  
Systems

Wood River Junction, Rhode Island

DATE: 1/13/81

TIME: 11:30 AM

I, Francis J. Boyle, do hereby make the following free and voluntary statement to Mr. R. E. Shepherd, who has identified himself to me as an Investigator for the U.S. Nuclear Regulatory Commission. I make this statement freely with no threats having been made against me or promises extended to me. I hereby give permission to the NRC to use my name as the source of the information contained in this statement.

At no time did I ever say to Jim Wakefield or to anyone else that there was seepage into the ground under lagoon B or any other lagoon and I never said to anyone at any time that Owen McCormick or that any other individual had deliberately waded out into lagoon B or any other lagoon and punched holes into the lagoon liner with some type of instrument in order to get the water in the lagoon to seep into the ground and lower the water levels.

I have read the above statement consisting of one (1) page which has been written by Mr. Shepherd for me at my request. I have made any necessary corrections and have initialed them in ink. This statement is the truth to the best of my knowledge and belief.

(Signature) 1/13/81 11:45 AM  
Francis J. Boyle

Subscribed and sworn to before me this thirteenth day of January 1981 at United Nuclear Corporation Recovery Systems, Wood River Junction, R.I.

Raymond E. Shepherd, Investigator

Witnessed:

R. Keith Christopher, Investigator, Region I, NRC 1/13/81 11:45 AM

EXHIBIT 34

STATEMENT OF THOMAS ASHLEY

United Nuclear Corporation Recovery  
Systems  
Wood River Junction, Rhode Island  
January 14, 1981

I, Thomas Ashley, make the following voluntary statement to Mr. Raymond E. Shepherd who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I make this statement freely with no threats or promises of reward having been made to me. Mr. Shepherd is writing this statement for me at my request. I am presently employed as Senior Plant Chemist at United Nuclear Corporation Recovery Systems (UNC), Wood River Junction, Rhode Island and have worked at UNC since June 1977.

I have no knowledge of anyone pumping waste material or contaminated material in a lagoon onto the ground during 1978 or at any other time. I have no knowledge of any pumping of liquid in the lagoon area which resulted in soil erosion under the protected area fence or which left large gaps, openings or spaces between the bottom of the fence and the ground.

Before lagoon G was used to contain waste process material, I recall that I assisted in pumping rainwater from lagoon G and this occurred around December 1977. The liner in lagoon G was installed sometime between September 14, 1977 and September 27, 1977. I don't know for sure where the rainwater from lagoon G was discharged to but on at least one occasion on October 15, 1978 I observed the pumping rainwater by company personnel from the top of the raincover on lagoon G, when this lagoon was being used to contain waste process material. There were a couple of occasions when I observed the pumping of rainwater from the top of the raincover on lagoon G and there was at least one occasion when I recall that the discharge hose from the pump had discharged the rainwater under the vehicle gate on the north side of the protected area fence near the northeast corner of the protected area boundary. The discharge of rainwater from the top of the raincover on lagoon G did not cause any large erosion of soil under the protected area fence where the vehicle gate is located and I would estimate that any such erosion of soil may have left a space under the vehicle gate measuring no more than two (2) or three (3) inches high and four (4) inches wide.

I also recall that some rainwater that was pumped from the lagoon area, either from lagoon G before it was used to contain waste process material or from the top of the raincovers on the other lagoons, and that this rainwater was discharged from the fire hose connected to the pump to an area near the east side of the protected area fence near the northeast corner of the protected area boundary. I do not recall seeing any erosion of soil under the protected area fence at the above location which resulted from the pumping of rainwater from the lagoon area. It is possible that the rainwater which was pumped from lagoon G, before it was used to contain waste process material, or from the raincover on lagoon G, was discharged from a fire hose which passed over lagoon D and the end of which was positioned near the east side of the protected area fence

near the northeast corner of the protected area boundary. I also recall that I observed pumping rainwater from the top of the raincovers on lagoons E and F, possibly during the Fall of 1977 or the Spring of 1978 and this rainwater was discharged from a fire hose which passed over or around lagoon D and was put under or near the east side of the protected area fence near the northeast corner of the protected area boundary, approximately 25 feet from the corner. This pumping of rainwater from the raincovers on lagoons E and F did not cause any noticeable soil erosion under the fence that I can recall.

With regard to pumping rainwater from lagoon G, before it was used to contain waste material, as described above, I would estimate the the level of water in the lagoon was reduced about 2 or 3 feet by this pumping operation. With regard to pumping of rainwater from various lagoon raincovers, as described above, I would estimate that about 12 inches of rainwater was pumped from each raincover. All of the lagoon covers were black. The rainwater on top of the lagoon covers was always tested by UNC Nuclear Industrial Safety personnel before any such rainwater was pumped onto the ground. To the best of my knowledge there was never any pumping of rainwater or any liquid from the lagoon area onto the ground during the second shift (4:00 PM - midnight) or third shift or during weekends or holidays. It was a joint responsibility of myself and Russ Smith, a former UNC management employee, to initiate the pumping of rainwater from lagoon G, before it was used to hold waste material, and from the tops of the lagoon covers and it was our responsibility to monitor the volume changes in the lagoons, the condition of the lagoons and the lagoon covers and the water collecting on the covers. At no time did I ever or anyone else ever, to my knowledge, initiate the pumping of rainwater off the top of lagoon covers when there was any contamination of the rainwater or commingling of the rainwater on top of the lagoon covers with the lagoon supernate under the covers. I have no knowledge of anyone throwing rocks, boulders, lead weights or other heavy objects into the lagoons or through the lagoon raincovers. I have no knowledge of anyone punching holes in lagoon liners or cutting or piercing the liners for the purpose of having the lagoon contents seep into the ground. I have read the foregoing statement consisting of five (5) handwritten pages. I have made any necessary corrections and have initialed them in ink. I have signed the first page in the left hand margin. This statement is the truth to the best of my knowledge and belief.

(Signature: 1/14/81 1410  
Thomas Ashley

Subscribed and sworn to before me this fourteenth day of January 1981 at  
United Nuclear Corporation Recovery Systems, Wood River Junction, R.I.

Raymond E. Shepherd, Investigator, NRC, Region I 2:11 PM, 1/14/81

EXHIBIT 35

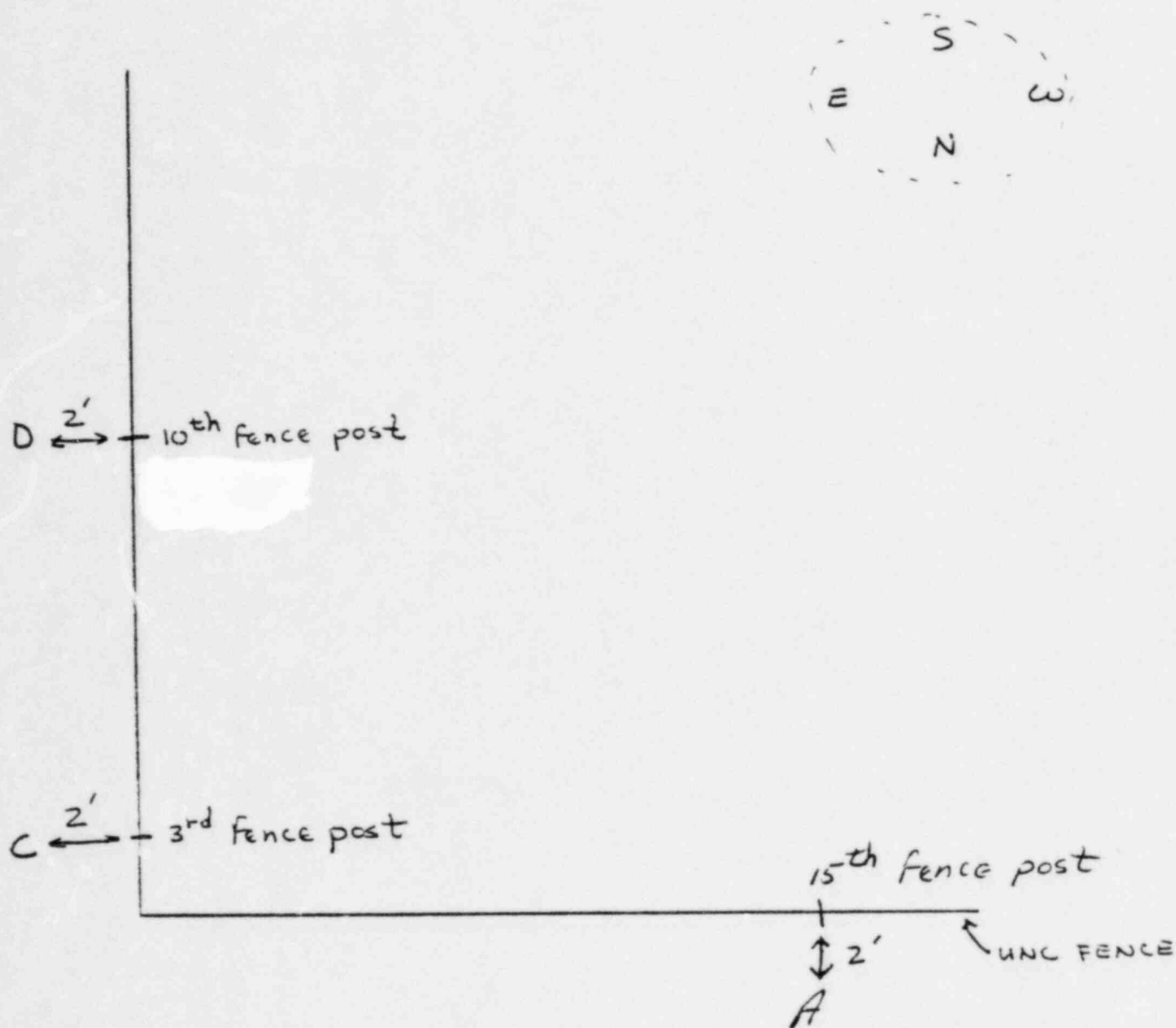
PROCESS WASTE LAGOON CHRONOLOGY

ACTIVITY	LAGOON IDENTIFICATION						
	A	B	C	D	E	F	G
Lagoon Installed	10/72	2/67	4/77	4-5/77	4-6/77	4-6/77	6/77
Liner Installed	12/72	2/67	4/77	5/77	6/77	6/77	10/6/77
Initial Use	12/72	3/67	4/77	5/77	6/77	6-10/77	10-12/77
Cover Installed	3/13/78	- - -	3/13/78	11/9/77	3/13/78	11/9/77	11/9/77
Cover Nonfunctional for Rainwater Separation	No Record	- - -	3/13/78	4/78	4/78	4/78	5/78
Air Bubble Cover Installed	- - -	- - -	3/20/79				
Lagoon Emptied/Decom- missioned	- - -	5-6/77	5-10-80				
<u>PUMPING RECORDS</u>							
~8/18/77 (Possible)	- - -	- - -	- - -	- - -	- - -	Rainwater	- - -
0/15/77 (Prior to First Use)	- - -	- - -	- - -	- - -	- - -	- - -	Rainwater 2-3 Feet
3/22/78	- - -	- - -	- - -	- - -	- - -	~43,000 Gallon Rain- water from F and G	
9/1/78 (to Swimming Pool)	- - -	- - -	- - -	- - -	- - -	- - -	~15,000 Gal.
2/79 (To 500,000 Gal. Covered Storage Tank)	- - -	- - -	- - -	- - -	- - -	- - -	~150,000 Gal.

Other rainwater pumping from covers possibly occurred but was not specifically recorded.

Note: Where a range of dates is given, the specific date could not be determined.

FIGURE I



B

This was a depression area at the end of a small gully

## Exhibit 37

TABLE I

SOIL SAMPLE ANALYSES

<u>SAMPLE</u> (depth)	<u>ISOTOPE</u>	<u>RESULTS</u> (pCi/g)
A-1 (0" - 2")	Ra-226	0.77 $\pm$ 0.07
	Ra-228	1.32 $\pm$ 0.14
	Cs-137	0.23 $\pm$ 0.04
A-4 (6" - 8")	Ra-226	0.73 $\pm$ 0.07
	Ra-228	0.98 $\pm$ 0.12
	Cs-137	0.17 $\pm$ 0.04
A-7 (12" - 14")	Ra-226	0.65 $\pm$ 0.07
	Ra-228	1.20 $\pm$ 0.14
B-1 (0" - 2")	Ra-226	0.72 $\pm$ 0.08
	Ra-228	1.57 $\pm$ 0.14
	Cs-137	0.31 $\pm$ 0.05
B-4 (6" - 8")	Ra-226	0.55 $\pm$ 0.06
	Ra-228	1.0 $\pm$ 0.2
	Cs-137	0.07 $\pm$ 0.03
B-7 (12" - 14")	Ra-226	0.40 $\pm$ 0.06
	Ra-228	0.89 $\pm$ 0.13

Note: Sample results are  $\pm$  1 standard deviation counting error. Also all sample results should include a systematic error of  $\pm$  50%.

C-1 (0" - 2")	Ra-226	0.57 $\pm$ 0.07
	Ra-228	1.16 $\pm$ 0.14
C-4 (6" - 8")	Ra-226	0.73 $\pm$ 0.07
	Ra-228	1.7 $\pm$ 0.2
	Cs-137	2.16 $\pm$ 0.07



<u>SAMPLE</u> (depth)	<u>ISOTOPE</u>	<u>RESULTS</u> (pCi/g)
C-7 (12" - 14")	Ra-226	0.81 $\pm$ 0.08
	Ra-228	1.5 $\pm$ 0.2
	Cs-137	0.41 $\pm$ 0.04
D-1 (0" - 2")	Ra-226	0.61 $\pm$ 0.06
	Ra-228	1.12 $\pm$ 0.13
D-4 (6" - 8")	Ra-226	0.92 $\pm$ 0.07
	Ra-228	1.34 $\pm$ 0.16
	Cs-137	0.21 $\pm$ 0.04
D-7 (12" - 14")	Ra-226	0.67 $\pm$ 0.06
	Ra-228	1.41 $\pm$ 0.15
	Cs-137	0.26 $\pm$ 0.03

Note: Sample results are  $\pm$  1 standard deviation counting error. Also all sample results should include a systematic error of  $\pm$  50%.

Y-1 (0" - 2") (offsite sample)	Ra-226	0.43 $\pm$ 0.09
	Ra-228	0.7 $\pm$ 0.2
	Cs-137	3.48 $\pm$ 0.12
Y-2 (2" - 6") (offsite sample)	Ra-226	0.74 $\pm$ 0.03
	Ra-228	0.5 $\pm$ 0.2
	Cs-137	1.16 $\pm$ 0.07
X-1 (0" - 2") (offsite sample)	Ra-226	0.37 $\pm$ 0.10
	Ra-228	0.7 $\pm$ 0.2
	Cs-137	3.78 $\pm$ 0.14
X-2 (2" - 6") (offsite sample)	Ra-226	0.48 $\pm$ 0.07
	Ra-228	0.67 $\pm$ 0.14
	Cs-137	0.18 $\pm$ 0.03
Pawcatuck River sediment (offsite sample)	Ra-226	0.55 $\pm$ 0.08
	Ra-228	0.64 $\pm$ 0.08
	Cs-137	0.06 $\pm$ 0.02

Note: Sample results are  $\pm$  1 standard deviation counting error. Also all sample results should include a systematic error of  $\pm$  50%.