

United States
Nuclear Regulatory Commission



Report of Investigation

Radiation Technology, Inc.:

Possible Willful Violation of License Condition
by Defeating a Safety System on the Service
Irradiator

Office of Investigations

Reported by OI: RI

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Title: RADIATION TECHNOLOGY, INC.:

POSSIBLE WILLFUL VIOLATION OF LICENSE CONDITION BY DEFEATING A
SAFETY SYSTEM ON THE SERVICE IRRADIATOR

Licensee:

Radiation Technology, Inc.
108 Lake Denmark Road
Rockaway, New Jersey 07866

Docket No.: 030-07022

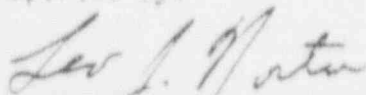
Case Number: 1-86-006

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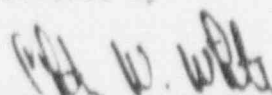
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SYNOPSIS

This investigation was initiated based upon a request from the Regional Administrator, Region I, that an investigation be conducted into a potential license violation discovered during the course of an inspection at Radiation Technology, Inc. (RTI), Rockaway, New Jersey. The investigation attempted to determine whether RTI management intentionally violated a license condition by bypassing a safety interlock system on their service irradiator, and whether licensee personnel attempted to delay an unannounced NRC inspection as part of an effort to conceal the bypassed safety interlock.

During an inspection on February 26, 1986, NRC Region I inspectors observed an RTI Irradiator Operator bypass the safety interlock on the personnel access door of the service irradiator. This safety interlock is a condition of RTI's license. Additionally, when the inspectors first arrived at the RTI facility, they were delayed by licensee personnel for approximately 1/2 hour from starting their inspection.

This investigation determined that the bypassing of the safety interlock system on the personnel access door was done with the knowledge and at the direction of RTI management. Evidence developed during the investigation indicated that the Operations Manager was the highest ranking RTI official aware of this practice. The investigation also revealed that the delay of the inspectors was due to a general understanding on the part of RTI operators. None of the RTI personnel indicated that this delay was part of an effort to conceal the bypassed safety system.

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ACCOUNTABILITY

The following portion of this ROI (Case No. 1-86-006) will not be included in the material placed in the PDR. They consist of pages 2 through 24.

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APPLICABLE REGULATIONS

Section 161 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2201) provides, in part: In the performance of its functions the Commission is authorized to...

"b. establish by rule, regulation, or order, such standards and instructions to govern the possession and use of special nuclear material, source material, and byproduct material as the Commission may deem necessary or desirable to promote the common defense and security or to protect health or to minimize danger to life or property..."

Section 223 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2273) provides, in part:

"Whoever willfully violates, attempts to violate, or conspires to violate, any provision of this Act for which no criminal penalty is specifically provided or of any regulation or order prescribed or issued under section 65 or subsections 161 b., i., or o, shall, upon conviction thereof, be punished by a fine of not more than \$5,000 or by imprisonment for not more than two years, or both..."

Conditions 17 and 18 of License No. 29-13613-02 incorporate by reference certain commitments made by the licensee in correspondence relating to the licensing process. Among these commitments are:

Radiation Monitor - A radiation monitor which monitors the radiation level inside the irradiator room is interlocked with an electric latch on the access maze personnel door. The electric latch will not actuate to open the access maze personnel door if the radiation monitor indicates greater than eight times background radiation level. This interlock must be reset and clear after irradiator operation to gain personnel access to the irradiator room, and will not allow personnel access during irradiator operation.

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INTERVIEWEES

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DETAILS OF INVESTIGATION

Purpose of Investigation

The purpose of this investigation was to determine whether Radiation Technology, Inc. (RTI), Rockaway, New Jersey, willfully violated a condition of its license by intentionally bypassing a safety interlock system on their service irradiator. An additional aspect of the investigation was to determine whether licensee personnel attempted to delay an unannounced NRC inspection as part of an effort to conceal the bypassed safety interlock system.

Background

This investigation was initiated based upon a request (Exhibit 1) from Thomas E. MURLEY, Regional Administrator, Region I, that an investigation be conducted into the willfulness of a potential license violation discovered during an inspection of RTI's Rockaway facility on February 26, 1986. The Request for Investigation also noted that there was a half-hour delay from the time the inspectors arrived at the facility until they were allowed to begin their inspection.

On March 3, 1986, James M. TAYLOR, the Director of the Office of Inspection and Enforcement, issued an immediately effective Order (Exhibit 2) suspending RTI's license. The order was based upon violations of license conditions (Exhibits 5 and 6) discovered during inspections on September 26, 1984, and February 26, 1986, and findings developed during a previous OI investigation (Case No. 1-84-026). By letter of March 13, 1986 (Exhibit 3), TAYLOR conditionally rescinded the suspension Order provided RTI comply with the various conditions listed in the rescission order. Dr. Martin A. WELT, the President and Chief Executive Officer of RTI, requested a hearing on the suspension Order by letter of March 16, 1986 (Exhibit 4).

Interview of NRC Inspector

On March 10, 1986, Francis M. COSTELLO, Senior Health Physicist, Region I, was interviewed by OI Investigators (Exhibit 8). COSTELLO said that he and "Ed" WURTZ arrived at RTI's Rockaway facility at approximately 8:00 a.m. on February 26, 1986, to conduct an unannounced inspection. When they arrived at the facility, the inspectors noticed that the red light on the irradiator building was on which would indicate that the irradiator was in operation.

COSTELLO said that when they first arrived, Jean KOLAKOWSKI, the receptionist, admitted them to the building. After telephoning the irradiator operator, KOLAKOWSKI returned and told the inspectors that they could not go down to the irradiator area and start their inspection until "Bill" JOURIS arrived. Shortly thereafter, "Jeff" BRIER arrived and took the inspectors back to his office. COSTELLO related that soon after going back to BRIER's office, they noticed that JOURIS was sitting at the desk in his office and appeared to have been there for awhile. JOURIS then took the inspectors down to the irradiator area. COSTELLO estimated that they had been delayed approximately 1/2 hour from starting their inspection.

COSTELLO said that one of the first things they wanted done as part of the their inspection was a test of the safety interlocks. By the time they arrived at the irradiator area, the source was already down, and COSTELLO asked that the access door be opened so that they could begin their inspection. COSTELLO said that he then observed "Dave" CONSTANTINE, the operator, use a screwdriver to reach through the wire mesh door and manipulate the door knob from the inside to open the door. COSTELLO stated that in addition to WURTZ, JOURIS, and BRIER also witnessed CONSTANTINE opening the personnel access door in this manner.

COSTELLO said that when he asked CONSTANTINE why he had used the screwdriver to open the personnel access door, CONSTANTINE told him that the key would not work because the radiation monitoring unit was broken and would not send the permissive signal to the door. When asked by COSTELLO, Jeremy WOLFE told him that problems with the radiation monitoring system had begun around February 20 and then failed for good on February 25, 1986. COSTELLO related that WOLFE said an individual from Nuclear Research Corporation had attempted to repair the unit on February 25 but was unable to do so. CONSTANTINE told COSTELLO that he knew how to open the door by using a screwdriver since he had seen this method used several years ago when there had been a problem with the personnel access door.

COSTELLO said that JOURIS acknowledged to him that he was aware that they had been operating in the irradiator without the radiation monitor functioning properly. JOURIS told COSTELLO that he had thought about not permitting operations to continue in this manner but decided to let them operate anyway. COSTELLO stated that later that day, he spoke with WELT who told him that he knew that RTI was having a problem with the radiation monitoring unit but did not know that they were bypassing the safety interlock on the personnel access door.

Interview of Operations Manager

On March 11, 1986, William Edward JOURIS was interviewed by OI Investigators (Exhibit 9). JOURIS said that, among his other duties, he is currently the Operations Manager of RTI's Rockaway facility. JOURIS said that on February 26, 1986, he escorted NRC Inspectors "Frank" COSTELLO and "Ed" WURTZ to the service irradiator. When COSTELLO requested the door to the cell be opened, "Dave" CONSTANTINE, the operator on duty, opened the personnel access door by inserting a screwdriver through the wire mesh door and manipulating the door knob spindle.

JOURIS related that when this occurred, he was aware why this was necessary. He said that the radiation monitor had been removed and that the permissive signal to the safety interlock on the personnel access door could not be given without the radiation monitor. JOURIS said that on the previous day he had made the decision and personally removed the radiation monitor from the irradiator. He said that he did so because "Jeremy" WOLFE had told him that the monitor seemed to be malfunctioning. JOURIS said that he thinks that the first time he had heard that it was malfunctioning was during the day of February 25.

JOURIS said that after removing the radiation monitor, he gave it to Bart KAPLAN of Nuclear Research Corporation in Dover, New Jersey. JOURIS said that KAPLAN had come to RTI to deliver another part. JOURIS could not recall whether he had telephoned KAPLAN about the radiation monitor or just took the opportunity to give it to him since he was there delivering the other part. JOURIS said that it was just after 6:00 p.m. on the evening of February 25 when he removed the radiation monitor and gave it to KAPLAN. JOURIS recalled that KAPLAN returned with the radiation monitor around noon time on February 26 while the NRC inspectors were present. The radiation monitor still did not work in the plant, and RTI replaced it with another monitor from the Salem, New Jersey, facility.

JOURIS said that it was entirely his responsibility that they continued to operate the irradiator without the safety interlock system involving the radiation monitor. He said that "Gerry" CUNNINGHAM was the operator on the night of February 25. JOURIS said that he was aware there was product that needed to be irradiated and was going to be run that night. JOURIS said that he could have told them not to operate the irradiator but did not do so. He said that he did not think about how the operator would get in and out of the cell and, the first time he saw how this was done was on the morning of February 26. JOURIS stated that he did not think of the continued operation of the irradiator without the radiation monitor as a licensing violation until the morning of February 26. He said that it did occur to him that the continued operation of the irradiator with a false signal from the radiation monitor could be an unsafe situation because the monitor would give the permissive signal even if radiation was present.

JOURIS related that he did not advise WELT of the problem and did not think that WELT was aware of the situation until the meeting with the NRC inspectors on February 26. JOURIS stated that he did not notify BRIER, SADEK, RUSSEN, or any other member of RTI management concerning the problem. He said, to the best of his knowledge, this method of entering the cell had not been used previously.

JOURIS said that any delay of the NRC inspectors in entering this facility on February 26 was due to his "standing orders" that no visitors were to be allowed into the cell area outside of normal business hours. He said that up until the time of this incident, he was not aware that the NRC could have access anytime the facility was operating. He said he is now aware of this. JOURIS related that he did tell "Dave" CONSTANTINE to shut down the irradiator on the morning of February 26, but he did not recall why he did so. JOURIS thought that he may have done so "in panic" because he was not expecting an NRC inspection. JOURIS stated that he was not trying to delay the entry of the inspectors or hide anything from them.

During the interview, JOURIS furnished photocopies of the RTI "Daily Sign In" sheet for February 26, 1986 (Exhibit 10), and one page of the "Irradiation Log Sheet" covering the period of February 22 to March 1, 1986 (Exhibit 11).

INVESTIGATOR'S NOTE: At approximately the mid-point of the interview with JOURIS, WELT entered the conference room where the interview was taking place and asked in a very loud voice if the investigators had heard him shouting outside the room. WELT then said in a very loud and threatening

voice that we had not heard the last of it and that if the plant was not up and operating by that afternoon, we are looking at a \$50,000,000 lawsuit. WELT then left the conference room, violently slamming the door behind him.

Interview of Assistant Operations Manager

On March 11, 1986, Jeremy Douglas WOLFE was interviewed by OI Investigators (Exhibit 13). WOLFE is currently the Assistant Operations Manager/Plant Superintendent at RTI's Rockaway facility. WOLFE said that he first started suspecting trouble with the radiation monitor on the Thursday (February 20, 1986) before the NRC inspection. He said that the needle on the radiation indicator on the control console was not coming all the way up as it should have but they were still receiving the permissive signal on the personnel access door. WOLFE related that he had talked to WELT approximately two weeks before this regarding the regulatory steps necessary to upgrade the radiation monitoring system. WOLFE said that he wanted to have installed the same monitoring system as in RTI's North Carolina plant. WOLFE said that this discussion took place before the development of the most recent problems with the radiation monitor.

WOLFE related that when he first noticed the problem with the radiation monitor on February 20, he mentioned it to JOURIS. He believes he told him that he just did not think it was working correctly. WOLFE thought that JOURIS may have said something about getting a repairman out to look at it.

WOLFE thought that JOURIS probably told him sometime on Tuesday (February 25) that a repairman was coming that night to look at the radiation monitor. WOLFE said that he did not have discussions with anyone else about the problems with the radiation monitoring system. That evening, the repairman pulled the radiation monitoring unit's electronic box from the rear of the control console but still could not get it working so he took it with him to his shop. WOLFE could not recall whether JOURIS or someone else went into the cell to remove the monitoring probes. WOLFE said that at the time the repairman was removing the unit, CONSTANTINE was just completing his shift and CUNNINGHAM was coming on. WOLFE said that JOURIS and he were the only other persons present. He also stated that until February 25 when the repairman arrived, they were still getting the permissive signal and, consequently, still using the key to access the cell.

WOLFE said that he did not recall any discussion of whether or not they should continue operating without the radiation monitor, but he knew that they had product to irradiate and it was his understanding that it would be processed that night. WOLFE said that he did not realize at the time that they would not be able to get a permissive signal if the monitor was removed. WOLFE said that an operator would have to enter the cell between runs in order to hit the reset button prior to starting a new run. He said that CUNNINGHAM would have had to enter the cell between runs on the night of February 25 by either using a screwdriver or reaching around to open the door from the inside. WOLFE said that he had no recollection of questioning CUNNINGHAM regarding this matter. WOLFE said that he still thought that the operation was safe because of the other safety interlocks and the survey meter. He stated that it did not occur to him that it was a possible licensing problem until the following morning when the NRC inspectors were there.

WOLFE said that on the morning of February 26, he arrived in the cell area at about 8:30 a.m. "Dave" CONSTANTINE was the operator on duty at the time when JOURIS called down and said that the NRC inspectors were here and that they would be down shortly. WOLFE said that he had no recollection of being told to stop operating but thought that they were unloading the cell at the time. He said that when NRC Inspector "Frank" COSTELLO asked that the personnel access door be opened, CONSTANTINE, who could not get the permissive signal, reached through the door with the screwdriver and turned the latch. WOLFE said that he had never seen this technique used before and did not recall talking to CONSTANTINE about it. WOLFE said that he had no knowledge of any attempt to delay entry by the NRC inspectors on February 26. He said that he and JOURIS were under the general understanding that it was company policy not to allow NRC inspectors entry until the Radiation Safety Officer or Plant Manager showed up. WOLFE said that he was not aware of any other procedural or license violations.

Interviews of Engineering Personnel

On March 11, 1986, Jeffrey Paul BRIER was interviewed by OI Investigators (Exhibit 12). BRIER is currently the Director of Engineering for RTI. BRIER said that he had never seen the personnel access door to the irradiator opened by reaching through the door with a screwdriver until the NRC inspection on February 26, 1986. He related that until that time, he was not aware they had been experiencing problems with the radiation monitor.

BRIER said that after the NRC inspection, he learned that the radiation monitor had been taken out on the night of February 25 for repair by the Nuclear Research Corporation. BRIER said the unit still did not function satisfactorily when it was reinstalled and he had to design new circuitry for the installation of a new monitoring unit which they obtained from their Salem facility. BRIER related that when he was overseeing the installation of the new unit, he learned through "absorbed hearsay" that the old radiation monitoring system had been behaving "funny" for several days prior to the NRC inspection on February 26. He added that he did not know if the system ever totally failed.

BRIER said that when he arrived at work on February 26, 1986, he met the NRC inspectors who told him they had been denied entry. He said that he brought them back to his office and, when he noticed that "Bill" JOURIS was in, he took the inspectors to JOURIS. BRIER said that he had no knowledge of any attempt to delay entry by the inspectors other than the fact that on off shifts, the operators did not allow visitors into the cell areas. BRIER added that he was not aware of any reason why an irradiation run would be stopped upon the arrival of the NRC inspectors.

On March 11, 1986, Theodore RUSSEN was interviewed by OI Investigators (Exhibit 19). RUSSEN related that he voluntarily retired from RTI on February 28, 1986. Prior to his retirement, RUSSEN had been the Manager of Facilities and Engineering for RTI.

RUSSEN said that during the last two weeks prior to his retirement, he was working on the problem of the radiation monitoring system for the service irradiator. He said that the monitor had never really worked that well,

describing it as, "on and off, on and off." He stated that, at times, there would be a problem getting the permissive signal for the personnel access door. RUSSEN said that after the most recent problem with the system, a repairman from the Nuclear Research Corporation tested the monitoring tubes, which he found to be okay. RUSSEN, therefore, thinks that the problem was in the circuit boards in the monitoring system.

RUSSEN recalled having seen CONSTANTINE and WOLFE use a screwdriver to open the personnel access door. RUSSEN assumed that JOURIS was aware of this practice but did not think that WELT was aware of it, because he would not condone such a practice.

On March 17, 1986, Bart Alan KAPLAN, was interviewed at the offices of the Nuclear Research Corporation, Richboynton Road, Dover, New Jersey (Exhibit 21). KAPLAN related that he has been employed as a Project Engineer for Nuclear Research Corporation for approximately three years. He said that he had not had any dealings with RTI until sometime around February 19-21, 1986. During that time period, he began working on a Radiflow unit which had been brought into the shop for repairs from RTI. In connection with these repairs, he called "Bill" JOURIS of RTI to quote an estimated cost of the repairs.

KAPLAN said that on February 25, he received a telephone call from JOURIS who told him to stop work on the Radiflow unit and to pick up another piece of radiation detection equipment which needed repairs. KAPLAN went to RTI after working hours on February 25 since he was doing this repair work on his own.

KAPLAN said that when he arrived at RTI, JOURIS took him down to the control room. JOURIS "unplugged" the radiation monitoring unit from the console and gave it to KAPLAN. JOURIS told KAPLAN that the unit was tied in with the safety interlock system and was used for monitoring the radiation levels of the source. KAPLAN said that JOURIS did not ask for an estimated cost of the repairs but told him that they needed it as soon as possible.

KAPLAN said he worked on the radiation monitoring unit for a couple of hours that night and discovered that the unit was basically functioning properly. KAPLAN said JOURIS called him the next day, and he (KAPLAN) told him that the unit was working properly. JOURIS told KAPLAN to return the unit as soon as possible, and KAPLAN said he did so during his lunch hour. KAPLAN said that when he brought the unit back to RTI, he gave it to JOURIS. KAPLAN said that he did not have any other involvement with the radiation monitoring unit.

Interviews of Irradiator Operators

On March 11, 1986, David P. CONSTANTINE was interviewed by OI Investigators (Exhibit 14). CONSTANTINE is currently a Shift Supervisor/Irradiator Operator at the Rockaway facility. CONSTANTINE said that he is a day shift operator on Sundays, Mondays, Tuesdays, and every other Wednesday.

CONSTANTINE said that during his shift on Sunday, February 23, 1986, the green permissive light on the personnel access door was acting erratically, in that sometimes he would get the permissive signal and other times he would not. On a few occasions, he would return to the console to reset the signal and try

again but got tired of doing so. CONSTANTINE said that on a couple of occasions, he used a screwdriver to unlock the door and then walked in with the survey meter. He related that he left the screwdriver on top of the conveyor door cage so that it would be handy. The next day, he told WOLFE about the problems with the permissive signal, and CONSTANTINE believed that WOLFE said he was going to look into it. CONSTANTINE stated that on this day, however, the light was working properly.

CONSTANTINE said that on February 25, he again began experiencing problems with the permissive signal and notified WOLFE and JOURIS. Later that same day, he went over to the Radwood side of the plant. When he returned, at approximately 5:30 p.m. to 5:45 p.m., a repairman was there, but had not started to work on the unit. CONSTANTINE stated that before he left for the day, he mentioned the problem to "Gerry" CUNNINGHAM, the evening Shift Operator who was coming on duty.

CONSTANTINE said that when he arrived for work the next morning, CUNNINGHAM told him that the repairman had taken the radiation monitor back to his shop. CONSTANTINE said he did not discuss the matter with CUNNINGHAM, but because the radiation monitoring system was not working, CUNNINGHAM would have to have used some method, such as the screwdriver, to open the personnel access door. CONSTANTINE said that the only other time he remembered someone using a screwdriver to open the access door was approximately two or three years ago when there had been a problem with the radiation monitor. CONSTANTINE said he could not remember who used the screwdriver on that occasion.

CONSTANTINE related that on the morning of February 26, "Jean" KOLAKOWSKI called him and told him that NRC inspectors had arrived. CONSTANTINE said that he told her not to let them in until he had an opportunity to call his supervisor. By this, CONSTANTINE meant either WELT or JOURIS. CONSTANTINE said that his decision not to let the inspectors in was based on his understanding that this was the proper procedure to follow. CONSTANTINE said that this was the policy at his former employer, Isomedix, and he assumed that RTI had the same policy.

CONSTANTINE related that before he had an opportunity to call JOURIS, JOURIS had already taken the inspectors downstairs. CONSTANTINE said that when the inspectors showed up about 8:05 a.m., at the RTI office, he was in the middle of a batch run. He said he did not shut the irradiator down because the inspectors had arrived, but because the run had been completed by the time the inspectors arrived downstairs (approximately 8:30 a.m.). CONSTANTINE said that when he told KOLAKOWSKI not to let the inspectors in, he was not attempting to hide anything from them.

On March 17, 1986, CUNNINGHAM was interviewed by an OI Investigator (Exhibit 22). CUNNINGHAM related that he is a Shift Supervisor/Irradiator Operator at the Rockaway facility, and he works the night shift on Sundays, Mondays, Tuesdays, and every other Wednesday.

CUNNINGHAM said that he did not experience any problems with the radiation monitoring unit on February 23, 1986, because he did not have any product to irradiate. He related that he did not have any problem on the following night but said that "Dave" CONSTANTINE informed him that there had been a problem

with getting the green access light on the personnel door. CUNNINGHAM said that when he arrived on Tuesday evening, February 25, a repairman was already working on the AECL monitor. CUNNINGHAM said that since the cell was down, he went over to the wood shop. When he came back from the wood shop, JOURIS told him that the repairman could not fix the radiation monitoring unit and was going to take it with him.

CUNNINGHAM said that he asked JOURIS what was going to be affected by the removal of the monitoring unit. CUNNINGHAM related that JOURIS told him that basically, the only thing affected by the removal of the unit was the fact that he would be unable to get the green permissive signal light on the access door. According to CUNNINGHAM, JOURIS told him that the other safety interlock systems were working and to just use either his finger or a screwdriver to reach through and open the access door.

During the interview, CUNNINGHAM reviewed the irradiation log sheet and said that it would have been necessary for him to enter the cell on at least four occasions on the night of February 25-26, 1986. CUNNINGHAM said that when it was necessary to enter the cell, he used either his finger or a screwdriver from his tool box.

CUNNINGHAM said that he left work on February 26, 1986, prior to the arrival of the NRC inspectors. CUNNINGHAM said that until that time, it was his understanding that he should let NRC inspectors into the building but to have them wait until one of the corporate officers showed up. CUNNINGHAM related that he now knows that NRC inspectors have the legal right to enter any time the facility is in operation. CUNNINGHAM stated he did not believe there was any attempt to hide anything from the inspectors on the morning of February 26, 1986.

On March 11, 1986, Thomas Oather Glenn CHURCH was interviewed by OI Investigators (Exhibit 15). CHURCH is currently an Irradiator Operator/Shift Supervisor at the Rockaway facility, and he works the day shift on Thursdays, Fridays, Saturdays, and every other Wednesday.

CHURCH said that he was not aware of any problems with the radiation monitoring unit until Thursday, February 27, 1986. CHURCH related that when he arrived that morning, "Jeremy" WOLFE told him that one of the shift supervisors had used a screwdriver to open the personnel access door when some NRC inspectors were present. According to CHURCH, WOLFE added that the monitor had started to fail and that was the only method to open the access door. CHURCH said that he had never used anything other than the key to open the personnel access door.

CHURCH said that he had heard that the shift supervisor had not allowed the NRC inspectors to enter on the day of the inspection. CHURCH related that he had just been informed by either WOLFE or JOURIS that the operators were not supposed to keep out NRC inspectors and that they should just let the inspectors come in and "do what they wanted to."

On March 11, 1986, Michael Allen AYRES was interviewed by OI Investigators (Exhibit 16). AYRES is currently a Shift Supervisor/Irradiator Operator at the Rockaway facility, and his shift is at night on Thursdays, Fridays, Saturdays, and every other Wednesday.

AYRES said that he was not aware of any problems with the radiation monitoring system or the personnel door interlock until he read about it in the newspaper after the NRC inspection on February 26, 1986. He said that when he returned to work on the evening of February 27, he was advised that one of the supervisors had used a screwdriver to open the door. AYRES said that he had no knowledge of any other instances of someone using anything other than a key to enter the personnel access door.

AYRES added that he also heard that when the NRC inspectors arrived on the morning of February 26 that the supervisor had not let them in immediately. AYRES said that at that time, he also thought that that was the proper thing to do. Since the inspection, AYRES said that JOURIS had instructed him to immediately admit any NRC inspectors after checking their identification.

Interview of Secretary to the Vice President

On March 11, 1986, Margaret Jean KOLAKOWSKI was interviewed by OI Investigators (Exhibit 17). KOLAKOWSKI said that since November 1983, she has been the secretary to George SADEK, the Vice President and Treasurer of RTI. She said that on the morning of February 26, 1986, she was the first one to enter the offices of RTI. KOLAKOWSKI said that two NRC inspectors followed her in the door that morning. One of the inspectors identified himself as COSTELLO, and KOLAKOWSKI told them that nobody else was there at the time and she did not have authority to let them in. Shortly thereafter, "David" CONSTANTINE came upstairs from the operations area and told her that on WELT's instructions, they could not let the NRC inspectors enter until a supervisor arrived. KOLAKOWSKI said that she called "Bill" JOURIS at home and told him that two NRC inspectors had arrived. JOURIS said that he would be right there. KOLAKOWSKI said that she then informed the inspectors that they could not enter until JOURIS arrived and that he would be there shortly. KOLAKOWSKI said that she did not have any further conversation with the inspectors and after calling JOURIS, she had no further participation in the inspection. KOLAKOWSKI said that to the best of her knowledge, there was no attempt to hide anything from the inspectors.

Interview of the President of RTI

On March 11, 1986, Dr. Martin WELT was interviewed by OI Investigators (Exhibit 18). WELT said that toward the end of January 1986, WOLFE called him and asked if it would be possible to replace the maze radiation monitor with a better instrument because of some sporadic difficulty. WELT said that he asked WOLFE whether it was operating and WOLFE said that it was. WELT advised WOLFE to check the license and, if the instrument was not specifically described in the license, it could be replaced with instrumentation which did the same function. WELT told WOLFE to get back to him with an answer. WELT said that WOLFE never got back to him.

WELT said that the next time that he heard of anything regarding the radiation monitoring system was when he returned from Cleveland on February 26, 1986, after the NRC inspectors had already left. He said that he was briefed regarding the inspection probably by either JOURIS or SADEK. At that time,

all he was told was that they had been operating the irradiator with the maze monitor having been taken out. He said he did not learn until later about the method of opening the personnel access door with a screwdriver.

WELT said that the whole problem was caused by JOURIS' desire to improve the sensitivity of the monitor. WELT said that JOURIS' action in permitting the irradiator to be operated without the monitor was something that he should not have done. WELT said that he could not tell us why JOURIS did what he did, and that he could not tell us why POWELL did what he did. (This comment was in reference to the earlier investigation involving the defeat of the conveyor door interlock system.) WELT said that the whole irradiator cell has been rebuilt since JOURIS was hired as Operations Manager. WELT said that part of the upgrading was also his decision to take POWELL out of the job as Operations Manager as soon as JOURIS was licensed.

WELT said that even though the irradiator had been operated without the maze monitor, there were many other safety devices that still worked, such as: the green light on the console that indicates that the source is down; the radiation reading at the personnel access door; the safety interlock on the personnel access door that automatically drops the source if the door is opened; the photoelectric eye in the maze; the horn that sounds if the source is stuck in the up position; the light that flashes whenever the source is up; and, the smell of ozone that is present when the source is up. WELT said that he does not know what more he can do since he was lectured, coerced, yelled, screamed, audited, and tried to do everything to have his personnel follow safety procedures and the requirements of the license. WELT added, "I know the rules and the regulations, I don't break them."

WELT said that there were no standing instructions which directed operators to bar or delay NRC inspectors. He said that he was not aware of any conscious attempt to hinder the NRC inspectors on the morning of February 26, 1986.

WELT said that he understood the NRC concerns with the violations but not the severity of the actions. He said he also did not understand the NRC press releases, which result in inflaming public opinion. He added that he also did not understand how after four safety inspections of the new radiation monitor, the NRC could order the suspension of operations, after permitting the resumption of operations on March 1. WELT said that he also disagreed with the Order suspending the license, since according to NRC regulations, a radiation worker is not a member of the general public.

WELT said that it was his opinion that the NRC should be audited, because the inspectors were not properly trained and lacked rudimentary knowledge and because of the variations in the way in which the different Regions interpreted procedures and regulations. He said that he had contacted the Office of the President and Office of the Vice President about his current problems with the NRC.

Willfulness/Intent Section

During the OI investigation, the following evidence was developed regarding whether RTI intentionally violated a license condition by defeating a safety interlock system on their service irradiator:

1. Region I inspectors witnessed an RTI Irradiator Operator open the personnel access door using a screwdriver during the inspection on February 26, 1986. JOURIS, the Operations Manager, acknowledged to an inspector that he was aware they had been operating without the radiation monitor functioning properly. He also said that he had thought about not permitting operations to continue in this manner but decided to allow operations to continue (Exhibit 8).
2. JOURIS told OI investigators that he personally removed the radiation monitoring unit and gave it to a repairman on the evening of February 25. He said that it was entirely his responsibility that RTI continued to operate without the safety interlock system since he was aware that product was going to be irradiated on the evening of February 25, and he had the authority to order the cessation of operations (Exhibit 9).
3. WOLFE said that he did not recall any discussion of whether operations should continue without the radiation monitor, but he acknowledged that he knew product was going to be processed the night of February 25 (Exhibit 13).
4. KAPLAN said that when JOURIS gave him the radiation monitoring unit, he told KAPLAN that the unit was tied in with the safety interlock system and was used for monitoring the radiation levels of the source. KAPLAN related that JOURIS also told him that RTI needed the unit repaired as soon as possible (Exhibit 21).
5. CONSTANTINE acknowledged having used a screwdriver on several occasions to open the personnel access door (Exhibit 14). CUNNINGHAM said that when JOURIS told him about the removal of the radiation monitoring unit, he asked JOURIS what was going to be affected by the removal of the unit. JOURIS told him that the only thing affected by its removal was the fact that he would be unable to get the permissive signal on the access door. According to CUNNINGHAM, JOURIS told him that the other safety interlock systems were working and to just use either his finger or a screwdriver to open the access door. CUNNINGHAM entered the irradiator cell at least four times on the night of February 25-26, 1986, by bypassing the safety interlock on the personnel access door (Exhibit 22).

During the OI investigation, the following evidence was developed regarding whether licensee personnel attempted to delay an unannounced NRC inspection as part of an effort to conceal the bypassed safety interlock system:

1. When the NRC inspectors first arrived at RTI, they were refused admittance to the operations area. The inspectors were delayed approximately 1/2 hour from starting their inspection (Exhibit 8).
2. JOURIS said that any delay of the NRC inspectors was due to his "standing orders" that visitors were not to be allowed in the cell area outside of normal business hours. He said that he was not trying to hide anything from the inspectors (Exhibit 9).

3. When BRIER arrived at work on February 26, 1986, he met the NRC inspectors who told him that they had been denied entry. BRIER said that he had no knowledge of any attempt to delay entry by the inspectors other than the fact that on offshifts, the operators did not allow visitors into the cell area (Exhibit 12).
4. CONSTANTINE related that when KOLAKOWSKI informed him that NRC inspectors had arrived, he told her not to allow them entry until he had an opportunity to call WELI or JOURIS. CONSTANTINE said that when he told KOLAKOWSKI not to let the inspectors in, he was not attempting to hide anything from them (Exhibit 14).
5. Other irradiator operators indicated that up until the time of the inspection, it was their general understanding that NRC inspectors should not be admitted until a management representative arrived. None of them indicated any knowledge of an attempt to conceal information from the inspectors (Exhibits 15, 16, and 22).

Agent's Conclusions

Based upon the evidence developed during this investigation, I conclude that RTI willfully violated a condition of its license by intentionally bypassing a safety interlock system on its service irradiator. The investigation also clearly established that the NRC inspectors were delayed in gaining entry on the morning of February 26, 1986. None of the individuals interviewed during this investigation indicated, however, that this was part of an effort to conceal the fact that a safety interlock had been bypassed.

SUPPLEMENTAL INFORMATION

On March 13, 1986, at approximately 4:10 p.m., the reporting Investigator received an anonymous telephone call from an individual who identified himself as an employee of RTI. The caller said that he had heard that the OI investigators had attempted to interview "Gerry" CUNNINGHAM but had been told by RTI management that he was on vacation. The caller said that he wanted to inform us that this information was false.

The caller said that he also wanted to express his opinion that RTI's license should be revoked and that there was a rumor at the plant that once RTI got its license back, they were planning to sue the NRC for \$50 million dollars.

The caller said that he was not aware of any current ongoing violations but said that he was concerned about the storage of radioactive material behind the research and development pool. He said that this was an area where they had previously cleaned snubbers from nuclear reactors and that, although radiation signs were posted on it, he was concerned that the radiation levels may be excessive.

The telephone call ended at 4:17 p.m. and the caller agreed to notify OI if he became aware of any other violations.

The information regarding the caller's concerns about the possible storage of highly radioactive material was related to KINNEMAN at approximately 4:25 p.m. KINNEMAN said that he would pass this information along to COSTELLO who was scheduled to conduct an inspection at RTI on the following day. KINNEMAN said that he would advise OI if any violations were identified as a result of this information.

On March 31, 1986, KINNEMAN advised OI that, although material was stored where the caller indicated, no violations of radiation protection requirements were identified during COSTELLO's inspection.

As stated earlier in this Report, RTI was the subject of a previous OI investigation which determined that RTI, at the direction of its management, intentionally violated a license condition on numerous occasions by defeating a safety interlock system on their service irradiator (Case No. 1-84-026).

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LIST OF EXHIBITS

<u>Exhibit No.</u>	<u>Description</u>
1	Request for Investigation from Thomas E. MURLEY to Chester W. White, dated March 4, 1986. (3 pgs.)
2	Letter from James M. TAYLOR to Radiation Technology, Inc., dated March 3, 1986. Attached to the letter is an Order immediately suspending the license of Radiation Technology, Inc. (9 pgs.)
3	Letter from James M. TAYLOR to Radiation Technology, dated March 13, 1986. Attached to the letter is a "Conditional Rescission of Order Suspending the License." (12 pgs.)
4	Letter from Martin A. WELT to the Director, Office of Inspection and Enforcement, USNRC, dated March 16, 1986. (1 page)
5	License No. 29-13613-02, granted to Radiation Technology, Inc., dated August 17, 1981. (4 pgs.)
6	Cover letter and application for license from Radiation Technology, Inc. (19 pgs.)
7	Photocopy of photograph of personnel access door at the Rockaway facility of Radiation Technology, Inc. (1 page)
8	Report of Interview of Francis M. COSTELLO on March 10, 1986. (2 pgs.)
9	Report of Interview of William Edward JOURIS on March 11, 1986. (3 pgs.)
10	Radiation Technology Daily Sign-In Sheet for February 26, 1986. (1 page)
11	Radiation Technology Irradiation Log Sheet from February 22, to March 1, 1986. (1 page)
12	Report of Interview of Jeffrey P. BRIER on March 11, 1986. (2 pgs.)
13	Report of Interview of Jeremy D. WOLFE on March 11, 1986. (3 pgs.)
14	Report of Interview of David P. CONSTANTINE on March 11, 1986. (2 pgs.)
15	Report of Interview of Thomas O. CHURCH on March 11, 1986. (1 page)

<u>Exhibit No.</u>	<u>Description</u>
16	Report of Interview of Michael A. AYPES on March 11, 1986. (1 page)
17	Report of Interview of Margaret Jean KOLAKOWSKI on March 11, 1986. (1 page)
18	Report of Interview of Dr. Martin WELT on March 11, 1986. (3 pgs.)
19	Report of Interview of Theodore RUSSEN on March 11, 1986. (1 page)
20	Memorandum of Telephone Call from anonymous caller on March 13, 1986. (1 page)
21	Report of Interview of Bart A. KAPLAN on March 17, 1986. (2 pgs.)
22	Report of Interview of Gerald J. CUNNINGHAM on March 17, 1986. (2 pgs.)