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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

Charles Bechhoefer, Chairman  
Dr. Jerry R. Kline  
Dr. Peter S. Lam

In the Matter of

Docket No. 50-160-Ren

GEORGIA INSTITUTE OF TECHNOLOGY  
RESEARCH REACTOR  
Atlanta, Georgia  
Facility License No. R-97

ASLBP No. 95-704-01-Ren

GEORGIANS AGAINST NUCLEAR ENERGY  
PROPOSED FINDINGS OF FACT  
IN CONSIDERATION OF APPLICATION FOR RENEWAL OF FACILITY LICENSE

Georgians Against Nuclear Energy (GANE) respectfully submits these findings to the Nuclear Regulatory Commission.

"The Commission is authorized to issue licenses to persons applying therefor for utilization and production facilities useful in the conduct of research and development activities of the types specified in section 2051 of this title and which are not facilities of the type specified in subsection (b) of this section. The Commission is directed to impose only such minimum amount of regulation of the licensee as the Commission finds will

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permit the Commission to fulfill its obligations under this chapter to promote the common defense and security and **to protect the health and safety of the public** and will permit the conduct of widespread and diverse research and development." 42 U.S.C. §2134 (c) [Emphasis added].

While it may be official U.S. policy to encourage the nuclear industry (a policy that GANE notes is not being as ardently pursued as it was in 1954), even the Atomic Energy Act of 1954 makes it clear that this does not absolve the industry or the U.S. government from the serious task of protecting the health and safety of the public. This charge is not diminished by conditional language or vague ambiguities, and we feel that it must be considered as the highest possible priority in all matters involving what even nuclear advocates would admit are the most hazardous substances currently under human control. It is our contention, still strongly held, that management at Georgia Tech does not offer the public the highest level of protection to which we feel they are rightly entitled. While no major incidents involving mass contamination or loss of life have occurred at this facility, management's disturbing attitude towards regulatory compliance represents to us the very sort of climate where such an unfortunate instance could occur. Indeed, NRC Inspector Rebecca Long testified concerning an inspection she conducted in 1987, that Georgia Tech's history of performance had not shown a regard for regulatory compliance, for the need to follow the regulations that they had. (Long, Tr. 1635). Even to this day, just days before the evidentiary hearing on management began, when the highest scrutiny of operations at the facility could have been

assumed, Georgia Tech flamboyantly moved cobalt-60, flaunting State of Georgia and NRC regulations alike. (Boyd, Tr. 2191-2199). Mr. Boyd relates an astonishing tale of being consulted by Georgia Tech, not having worked on the campus for eight years, while in attendance at a conference of RSOs, as to the wisdom of Neely management's plan for moving the cobalt-60 source from Crenshaw's Mountain. When Mr. Boyd conveyed to Georgia Tech the assessment of no less than 43 radiation safety managers as to the requirements, both safety and legal, for conducting this move, the advice was ignored. This illegal move has since been investigated by the NRC, and Georgia Tech has been cited for violations as described in NRC Inspection Report 96-02. According to the service list, all parties have received this document.

We feel the need to note that Georgia Tech has denied GANE the respect due to ordinary citizens who are simply exercising their democratic right to due process. Up to and including their latest submission, we have been treated as a nuisance not worthy of their time and this attitude is not only rude, it does not speak well of the nuclear industry's willingness to act in good faith as a good community citizen.

The most unique aspect of the management of the Neely Nuclear Research Center at Georgia Tech, and the one that caused us the most trepidation about the facility to begin with, is the management structure which places the Director of the facility over the Manager of the Office of Radiation Safety. Far from assuaging our fears, the hearings actually provoked more concern and uncertainty on our part concerning the management structure. Two former radiation safety personnel at the Neely facility

testified that the current structure was unsatisfactory. The first, Brian Copcutt, resigned his position because of his belief that he could not properly perform the safety function under such an arrangement, even though he did not have another job to go to at the time. He states in his resignation letter (GANE Exhibit 13) that he objected to suggestions that he "should not, in the future, document observed regulatory violations or proposed program improvements." He also states that he "cannot, in good conscience, take responsibility for a program whose priorities I cannot set and in which I must compromise my professional judgments." (*Ibid*). This does not paint a picture which reconciles with protecting public health and safety. The second such witness, Bob Boyd, went so far as to refer to the current structure as "the fox guarding the henhouse" and called the decision to change to such a structure "a mistake - it was a mistake in my view, improper." (*Boyd, Tr. 2175*).

While such characterizations from our witnesses may be expected to a certain extent, we were quite genuinely surprised to find that Georgia Tech's own witnesses shared many of our misgivings about the current management structure at the Neely facility. While they were often quick to point out that this was mitigated by the fact that the current director, Dr. Karam, was very conscientious and safety conscious, we have been constantly reminded that it is not Dr. Karam or any individual whose performance we are to evaluate as a part of this proceeding. Especially with Dr. Karam due to retire soon, this management structure must be looked at on its own merit. When Dr. Nicholas

Tsoulfanidis, one of Georgia Tech's expert witnesses, testifies that "the present reporting method has the potential for errors, omissions, and abuse," (Tsoulfanidis, Tr. 1946) we cannot help but be concerned about such a system remaining in place. Also of concern to us is Dr. Tsoulfanidis' claim that "at present, the NNRC Director is also the RSO" (Tsoulfanidis, Tr. 1947), when we are assured by Dr. Karam and others that this is not the case. If even an experienced nuclear professional such as Dr. Tsoulfanidis is unclear about the structure at the facility after undertaking a thorough review of the facility, we cannot see how ordinary lay people can be expected to have confidence in such a management structure. Indeed, as part of his report, Dr. Tsoulfanidis offers an alternative structure which he testified "would work better." (Ibid). Dr. Tsoulfanidis expresses that the Nuclear Safeguards Committee offers a valuable check and balance function, but when questioned on the stand as to who would decide which matters merited the attention of the NSC, he answers, "My impression is that the director of the reactor will do it." (Tsoulfanidis, Tr. 1979). This can hardly be called independent oversight.

Even the current MORS at the Neely facility, Dr. Rodney Ice, expressed reservations about the current structure. Under oath, Dr. Ice testified that "I think that the alternative arrangement where the MORS and its health physicists are not subject to the supervisor (sic) control of the director of the Center would be better." (Ice, Tr. 1992 Insert, p. 17). He testified on the stand that "I think there should be a clear path between the RSO and executive management. So that is not a clear path at this time." (Ice, Tr. 2001). Although Dr. Ice, as did Dr. Tsoulfanidis,

expressed great confidence in Dr. Karam and his safety-conscious attitude, seeing that Dr. Karam is due to retire in less than a year and this permit renewal is good for 20 years, such assurances are of limited value.

Even Dr. Karam's own testimony raised issues of concern with us. His pre-filed testimony, stated that his "mission" as he understood it upon taking the job as Director of the Center was "to move in the direction of ending the yearly operating deficits by attracting funded research, and also to get more graduate students involved in the facility's nuclear research programs." (Karam, Tr. 2723 Insert, p.16). GANE considers it vital for public health and safety to be part of the mission of any director of a nuclear facility and finds the absence of such concerns in Dr. Karam's understanding of his mission to represent seriously flawed priorities on the part of upper management at Georgia Tech, who, as we have been reminded repeatedly, are the ultimately responsible parties for the Neely facility.

GANE's concerns about program priorities are exacerbated by the testimony of Dr. Copcutt that management discouraged safety as a priority even for the Manager of the Office of Radiation Safety. When GANE asked him about the content of his performance review in which it stated "It is not in the Center's best interest to only meet regulatory demands" Dr. Copcutt testified that he certainly viewed regulatory compliance as the appropriate primary responsibility for his position. Further, he had formed the impression that facility management wanted him to drum up business for the facility. (Copcutt, Tr. 1031). Dr. Copcutt testified that reactor promotion is not an appropriate task for an RSO or an



MORS. (Copcutt, Tr. 1074).

Dr. Karam stated on the stand, quite rightly, we feel, that "All violations obviously are to be avoided, and indeed if you have the diligent staff and always aware of what they're doing, none of them would occur." (Karam, Tr. 2759). However, we find this impossible to reconcile with the contradictory statement in his pre-filed testimony that "I do not think it realistic to suppose that a nuclear research facility can operate over the years wholly free of even minor violations" (Karam, Tr. Insert p. 19). Looking at these two statements, one could easily draw the conclusion that Dr. Karam finds it unrealistic to have a diligent staff and be aware of what they are doing, a most disquieting notion. As concerns the reorganization that he so stridently defends, even Dr. Karam admits that "I was aware all the time that the health physics society as a whole, or the RSOs anywhere, would feel uncomfortable under our restructured approach." (Karam, Tr. 2779).

In fact, when pressed on the matter Dr. Karam admitted that "if all the personnel that were working at the nuclear research center at Georgia Tech had more allegiance to professionalism and doing the job correctly, the reorganization proposal *would never have been made*" [emphasis added] (Ibid). However, even though Dr. Karam maintains that the current personnel at the Center meet this standard, he claims that "It makes sense to continue with the same structure." (Karam, Tr. 2780). We find this confusing and contradictory.

As pertains to quality of staff, GANE points to a glaring

problem, which although remedied in 1994, persisted for years and has disturbing implications about Georgia Tech's concern for public safety. Mr. Boyd testified about his experiences with the Senior Reactor Operator that was not only responsible for the notorious cadmium-115 spill of 1987, but several other dangerous incidents. Mr. Boyd described this SRO as throwing contaminated protective gear across the containment building, an action which endangered other personnel, and hitting and *cracking* the hot cell window in a fit of anger [emphasis added]. When asked by GANE how upper management responded to his reports about the SRO's misbehavior Mr. Boyd testified, "Well, I think he agreed with me to some degree, but since they only had, I think, two reactor operators and the license tech specs required them to have two, one senior and one licensed operator, to be able to operate that thing, or you couldn't bring in any money or you couldn't do any operations, you couldn't operate the reactor. It was kind of hard for him to take any action. If he took action against Bill, he had to wait another six months or however to train another person to be a senior reactor operator." (Boyd, Tr. 2166-2169). This is a gross example of Georgia Tech placing a higher priority on money than public safety which is unconscionable. Even more so for an educational institution whose primary community is young people. The SRO in question remained on the Neely staff until 1994 when he was fired for yet another serious incident involving unsafe reactor operation.

Proponents of the Neely facility are quick to point out in its defense that the facility has great potential for the future development of Boron Neutron Capture Therapy, a cutting edge



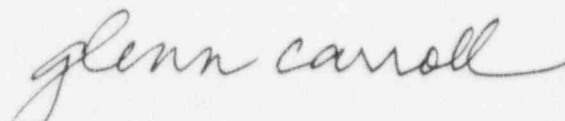
treatment for cancerous tumors. (This has been the only rationale offered by the licensee for the reactor's continued existence.) However, the further we delve into this aspect of the reactor's future, the more roadblocks we find to its application. Dr. Karam himself testified that in order to make this project a reality, they would have to fix the troublesome bismuth block leak which has resisted various efforts at repair for several years. (Karam, Tr. 3263). Also, Dr. Ice, a qualified pharmacologist, testified that even if the Neely facility was sufficient to perform this therapy, "the limiting factor now is not the reactor but the delivery vehicle, that is, the drug." (Ice, Tr. 2006). Dr. Ice went on to testify that there would have to be an overall "upgrade of the systems" at the reactor. (Ibid). Mr. Boyd testified that this therapy has been under consideration for 50 years without becoming practicable, with esteemed institutions MIT and Brookhaven National Laboratory working for its development. (Boyd, Tr. 2208-2209). Mr. Boyd also provides a disturbing description of the leaking bismuth block shield. Radiation leaks into the general area around the cracked shield. Further, water drips down to the basement carrying radioactive grindings from the shutter action as well as cobalt-60 and activation products. In the basement there is a creeping area of contamination which necessitates designation as a high radiation area. (Boyd, Tr. 2207). In summary, for this therapy to become a reality at Neely, not only will expensive modifications and repairs be required, a great breakthrough in pharmaceutical research which has eluded scientists since the beginning of the nuclear age will have to present itself. We find

this to be a tenuous basis for the continuance of this aging reactor for another 20 years.

GANE remains concerned about Neely management's ability to contain radiation from the environment and their ability to monitor the contamination that is occurring. In GANE Exhibit #66, .a.k.a. NRC Inspection Report 95-01, Georgia Tech is cited violations for numerous errors and omissions in environmental monitoring data over a 10 year period from 1983 through 1993. Myriad errors are committed in math. There are gaps - blanks - in the data. And for 10 years, in the absence of any meteorological monitoring equipment, the same windrose diagram is submitted over and over. In NRC Inspection Report 96-02, dated July 3, 1996, Georgia Tech is cited with yet another violation for failure to calibrate the G-M gas monitor in a timely fashion. We can only pray that the environment is not contaminated to a level which presents a health risk to the young people that attend Georgia Tech and to the general population of Atlanta. With the lack of reliable data as to what the environment has received from operations at the Neely Nuclear Research Center, it may never be known for certain what the risk to the population is. GANE pleads with the honored panel of judges, on behalf of the 75 souls who signed affidavits of concern about the reactor in their midst, that you deny the facility a license to operate in its broken-down, slip-shod fashion for another 20 years. And we plead with the management of Georgia Tech to give serious consideration to revising the mission of the nuclear facility. The Neely Reactor, which has given its designated 30 years of service, can provide a valuable model for nuclear waste research and facility

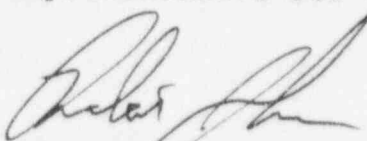
decommissioning which are still not well understood 50 years into the nuclear age. We reiterate that GANE would oppose a standard approach to decommissioning (carving up and landfilling the contaminated reactor and building) which carries a daunting price tag of \$10 million to \$20 million, but advocates that the facility be used to research alternative methods of shutting facilities with a legacy of long-lived, hazardous radioisotopes. The small reactor at Georgia Tech could be used for its original mission - education and research - to develop a method for safeguarding and storing the large complexes which the nuclear industry faces dealing with eventually, such as, Plant Hatch in middle Georgia and Plant Vogtle on the Savannah River. We look forward, faithfully, to applauding and offering assistance to Georgia Tech in the pursuit of an honorable future nuclear mission.

Respectfully submitted,



Glenn Carroll

Representative for GANE



Robert Johnson

Representative for GANE

Dated and signed October 11, 1996  
in Decatur, Georgia

CERTIFICATE OF SERVICE - Docket No.(s) 50-160-REN

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