



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 12, 1996

Mr. Robert H. Annan
Coordinator
Energy Committee, Gore-Mbeki Commission
Office of the Secretary
U.S. Department of Energy
Washington, D.C. 20585

Dear Mr. Annan:

This letter constitutes a formal proposal from the Nuclear Regulatory Commission (NRC) to add two new items on nuclear safety to the agenda of the Energy Committee of the Gore-Mbeki Commission and to participate in an existing item.

On Friday, June 28 Howard Faulkner and Karen Henderson of NRC's Office of International Programs met with you, Andrea Lockwood and Terri Tran to discuss planning for the July 19-23, 1996 Gore-Mbeki Commission meeting. As indicated by Mr. Faulkner and Dr. Henderson, NRC is interested in continuing and expanding the high-level dialogue on nuclear safety topics begun at the first Gore-Mbeki Commission meeting in December 1995, which was well received by the South African delegation. Expanding this nuclear regulatory cooperation would support the Gore-Mbeki Commission objectives by strengthening the key South African institution with responsibility for protecting the health and safety of their population in the use of nuclear energy, and will help ensure adequate energy supply for South Africa through enhancing confidence in the safe use of nuclear power. In addition, NRC believes cooperative programs in nuclear safety research would provide a basis for preventing and mitigating phenomena that older nuclear power plants were not originally designed to withstand. To this end, NRC proposes (see attachments) to add to the matrix of Energy Committee activities an item on strengthening nuclear regulation, and an item on South African participation in international nuclear safety research.

In addition to these new topics, NRC would like to offer its help with the matrix item currently identified as "nuclear safety," which supports South Africa's development of new nuclear safety and nuclear waste legislation. (To better reflect the apparently planned scope of cooperation, we suggest that the item be identified as "development of nuclear legislation.") NRC not only has extensive experience in the development and implementation of U.S. nuclear safety legislation, but has assisted various countries in the development, revision, and implementation of their national nuclear legislative frameworks. We can offer assistance that could include, but not be limited to, conducting meetings for visiting South African legislators and CNS staff on U.S. nuclear regulatory legislation. We do not anticipate any special funding requirements for such meetings.

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Mr. Robert H. Annan

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Finally, it should be noted that NRC will participate in the proposed U.S.-South African Nuclear Non-Proliferation conference (date to be decided), speaking on U.S. nuclear regulatory philosophy and its implementation.

We appreciate the opportunity to join in this unique forum to raise the level of the NRC approach to the South Africans on these important issues.

Sincerely,

(original signed by K. Henderson)

Carlton R. Stoiber, Director
Office of International Programs

Attachments:
As Stated

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NEW INITIATIVE FOR ENERGY COMMITTEE,
GORE-MBEKI COMMISSION

STRENGTHENING THE NUCLEAR REGULATOR

Background

South Africa currently operates two nuclear power reactors (built by the French, but based on a Westinghouse design) at Koeberg near Cape Town. They also operate a nuclear research reactor, the Safari 1. South Africa has developed a complete nuclear fuel cycle, including advanced waste management techniques, and acquired the technology to build nuclear weapons, which it has subsequently rejected. Nuclear materials are also used for medical and industrial purposes.

South Africa was isolated from interactions and activities with most of the developed countries for many years because of their nuclear weapons development program and the practice of apartheid. This isolation was especially true in the areas of nuclear energy and its applications, with the result that the South African approach to nuclear safety is indigenous and has not drawn on international experience. As with all countries utilizing nuclear processes, South Africa needs to ensure it has an independent, authoritative and technically competent nuclear regulatory body to protect public health and safety effectively.

In September 1994 the Nuclear Regulatory Commission (NRC) concluded a bilateral arrangement with its counterpart South African nuclear regulatory body, the Council for Nuclear Safety (CNS), for exchange of technical information and cooperation in nuclear safety matters. This includes exchanges on the regulation of safety of nuclear energy facilities and evaluation of their environmental impact by means of documents, seminars, meetings, etc. Additionally, there are provisions for participating in joint programs and projects relating to nuclear safety research. In implementing the arrangement, NRC has provided specialized technical training to CNS and hosted CNS technical staff. Also, NRC has met with CNS management to develop cooperative efforts, especially in the area of training of CNS personnel. A visit to South Africa by NRC Chairman Shirley Jackson for nuclear safety discussions and visits to nuclear facilities is planned for September 1996. Previously two other NRC Commissioners have made similar visits to South Africa.

Although staffed with well educated and technically competent people, the CNS could benefit from greater exposure to U.S. approaches to nuclear safety. In the technical area, the two South African light water power reactors have operated for nearly twelve years and are likely to encounter aging degradation similar to that encountered in many of the world's older reactors. The NRC has extensive experience in reactor aging which would be useful if shared with the CNS. Also, South Africa must deal with numerous sites of unstabilized uranium mill tailings, and the CNS could learn from the U.S. experience in this field, as well. More generally, NRC, drawing on its experience, could assist South Africa to develop a stronger and more independent regulatory regime. The US effort to support South Africa's development of new nuclear safety legislation could also be helpful in this regard.

NEW INITIATIVE FOR ENERGY COMMITTEE
GORE-MBEKI COMMISSION

PARTICIPATION IN INTERNATIONAL NUCLEAR SAFETY RESEARCH

Background*

South Africa was isolated from interactions and activities with most of the developed countries for many years because of their nuclear weapons development and the practice of apartheid. As a result, South Africa has not been involved in most of the international cooperative nuclear safety research programs. As a first step in changing this situation, in August 1994 the South African nuclear regulatory organization, the Council for Nuclear Safety (CNS), joined the Code Applications and Maintenance Program (CAMP), which is sponsored by the Nuclear Regulatory Commission (NRC). More than 15 countries participate in this collaborative effort to refine power reactor thermal/hydraulic computer codes. CNS pays \$45,000 annually to participate in the program.

The CNS could greatly benefit by involvement in other current NRC sponsored research in the areas of severe accident phenomena and reactor aging. The two South African light water nuclear power reactors have operated for nearly twelve years and are likely to encounter aging degradation similar to that encountered in many of the world's older reactors. Research in the various aspects of severe accident progression will provide the basis for preventing and mitigating phenomena that older nuclear power plants were not originally designed to withstand.

Proposal

In the area of nuclear safety research the NRC proposes two projects for CNS participation:

The Cooperative Severe Accident Research Program (CSARP)

This is an international program, with 21 countries performing experimental testing and developing of computer codes to predict severe accident behavior. The program addresses such subjects as core melt progression, fuel coolant interactions, fission product behavior, core-concrete interactions, containment heating and hydrogen behavior.

Since the signing of the NRC-CNS arrangement for exchange of technical information in September 1994, the staffs of the two organizations have discussed South African participation in CSARP. Although interested, the CNS has been deterred from joining because of the \$150,000 annual cost.

The NRC proposes that the CNS and NRC staffs continue to discuss details of the CSARP program. During this period the NRC will seek to obtain funds to cover the cost of CNS participation.

*Additional background is provided in the new initiative titled "Strengthening the Nuclear Regulator"

A proposal to expand nuclear regulatory cooperation between NRC and CNS was presented at the December 1995 Gore-Mbeki Commission (GMC) meeting, and was well received by the South African delegation. Expanding this cooperation would support GMC objectives by (1) strengthening the key South African institution with responsibility for protecting the health and safety of their population in the use of nuclear energy, and (2) helping ensure adequate energy supply for South Africa through enhancing confidence in the safe use of nuclear power.

Proposal

Defining a Cooperation Program

NRC staff expects to meet in Pretoria in September 1996 with CNS officials to continue development of a specific cooperation program. Depending on the outcome of these discussions, it may be useful for CNS representatives to visit NRC for further definition of this program, including exchanges of information from which both sides could benefit.

Short Term Training

The NRC anticipates accepting a few persons from the CNS for training in specialized technical areas such as plant aging and uranium mill tailings. The training could be conducted by formalized course work at NRC's Technical Training Center in Chattanooga, Tennessee or at our headquarters or regional offices. The training assignment for each individual would run from two weeks to 30 days.

Long Term Training

Depending on the outcome of NRC's discussions with CNS, there may be a need for broader and longer term training aimed at providing a full range of regulatory experience. This training would involve on-the-job training for regulatory personnel working side-by-side with NRC staff on particular tasks at NRC headquarters, regional offices and/or at facilities regulated by NRC for periods of six months to a year. NRC has extensive experience with this longer term training, known as the foreign assignee program, and recipients have been highly complimentary about its value, while NRC has obtained benefits as well.

Responsible Agency:

US Nuclear Regulatory Commission

Funding

The following addresses the funding situation for each of the areas in the above proposal:

No supplemental funding should be needed for South African visits to the US to define a cooperation program between CNS and NRC."

If the South Africans are unable to fund short term training for CNS staff, the NRC will seek appropriate funding as needs are fully defined. In the course of the next year, this might require \$30,000 of USAID-USIS funds. This estimate includes lodging, per diem and health insurance coverage for a few short term assignments. Training courses and short-term training are provided by NRC without charge.

As longer term training needs are identified, if the South Africans cannot pay for such training, NRC will seek to obtain necessary funding. Support from the IAEA might also be obtained. NRC does not charge for participation in its longer term training program.