

December 18, 2000

MEMORANDUM TO: Chairman Meserve  
Commissioner Dicus  
Commissioner Diaz  
Commissioner McGaffigan  
Commissioner Merrifield

FROM: Janice Dunn Lee, Director /S/  
Office of International Programs

SUBJECT: MEMORANDUM OF MEETING BETWEEN USNRC AND THE FEDERAL  
NUCLEAR AND RADIATION SAFETY AUTHORITY OF RUSSIA  
(GOSATOMNADZOR) FOR IMPLEMENTATION OF NUCLEAR SAFETY  
AND SECURITY ASSISTANCE PROJECTS

On Friday, December 8, 2000, Alexander Gutsalov, First Deputy Chairman, Gosatomnadzor (GAN), and the EDO signed the attached Memorandum of Meeting (MOM) describing the NRC-GAN program of assistance. The MOM summarizes progress made over the last year between our agencies and plans for next year.

Funding restrictions severely limited the number of activities in 2000. However, significant accomplishments were the completion of the Level 1 probabilistic risk assessment (PRA) at the Kalinin plant and licensing training. NRC also commented on proposed legislation pertaining to GAN's authority. In 2001, major activities are expected to cover the PRA study, additional training in licensing and inspection, enhancing the emergency response program, and expanding Internet access. NRC will continue to coordinate with DOE on topics of mutual concern, such as in-depth safety assessments, fabrication of mixed oxide fuel, and material protection, control, and accounting.

All agreements in the MOM were made with the understanding that they depend on the availability of funds. Projects related to safety are funded by the Agency for International Development. Projects related to safeguards are to be funded by the Department of Energy. NRC staff costs will be funded from NRC appropriations, not recoverable through license fees.

During the week, a "round table" discussion was conducted during which Mr. Gutsalov responded to questions of interest to the U.S. inter-agency community.

Attachment: Signed Memorandum of Meeting

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CONTACT: Gordon Fowler, OIP  
415-2329

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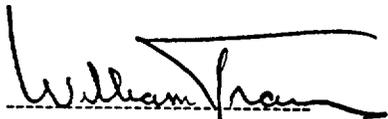
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M. Satorius, OEDO	O 16 E 15	F. Congel, IRO	T 4 D 18
S. Collins, NRR	O 5 E 7	J. Himes, IRO	T 4 A 43
R. Zimmerman, NRR	O 5 E 7	R. Borchardt, OE	O 14 E 1
J. Johnson, NRR	O 5 E 7	J. Schaefer, OCIO	T 6 F 19
D. Matthews, NRR	O 10 H 5	J. Shields, OCIO	T 6 F 33
B. Zalcman, NRR	O 11 F 1	W. Oliu, OCIO	T 6 E 7
M. Banic, NRR	O 1 F 1	S. Wood, OCIO	T 6 F 33
M. Cullingford, NRR	O 5 E 7	S. Treby, OGC	O 15 D 21
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**MEMORANDUM OF MEETING BETWEEN  
THE U.S. NRC AND THE FEDERAL NUCLEAR  
AND RADIATION SAFETY AUTHORITY OF RUSSIA**

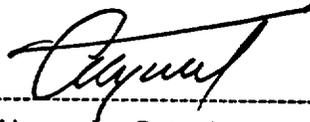
**DECEMBER 4-8, 2000**

Representatives of the Federal Nuclear and Radiation Safety Authority of Russia (RF Gosatomnadzor), including Alexander Gutsalov, First Deputy Chairman, Alexander Matveev, Director, Scientific and Technical Department, Andrei Vistgof, Director, Inter-regional Information Department and Irina Sokolova, International Relations Officer, visited the NRC during the period December 4-8, 2000.

During their visit, the representatives met with the Chairman, Commissioners, the Executive Director for Operations and appropriate members of the NRC staff. This was the ninth annual meeting between the two agencies, the purpose of which is to review program results and accomplishments since the last meeting in December 1999, to reaffirm or revise previous program commitments, and to consider proposals for future activities under the "Lisbon" program. The NRC agreed to support the program efforts described in this Memorandum of Meeting, subject to obtaining the necessary funding from the U.S. Government and in accordance with U.S. Government and NRC policy. The agenda for these and other discussions is described in Attachment 1.



William D. Travers  
Executive Director  
for Operations,  
U.S. Nuclear Regulatory Commission



Alexander Gutsalov  
First Deputy Chairman  
Federal Nuclear and  
Radiation Safety Authority of Russia

December 8, 2000

December 8, 2000

## PREFACE

**Program Goals and Objectives:** The goal of the program, as described in the December 1993 agreement between Russia and the U.S., is to cooperate for “consistently and effectively improving nuclear and radiation safety standards and regulations for use in the Russian Federation”. The cooperation includes, but is not limited to, “training in regulatory methods and procedures, inspection techniques and analysis, regulatory laws, and the use of radioactive monitoring equipment; and improving regulatory effectiveness by developing appropriate regulatory standards, requirements and procedures, as well as by procuring equipment.”

**Duration of Program:** At the outset, the program was to be of a very limited duration, totaling two-three years. As time passed, it became clear that a longer-term perspective was needed: conditions changed and technology transfers took longer than anticipated. Therefore, a rolling 3-5-year planning horizon has now supplemented the 12-18-month horizon.

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## **I. LEGAL BASIS**

### **A. Legislation and Enforcement Process**

#### **Results to date:**

NRC legal specialists reviewed draft law "On management of Radioactive waste" and draft law on nuclear liability and provided their comments on these drafts.

The specialists of Gosatomnadzor of Russia use these comments in discussions of the draft laws within the working groups of the State Duma.

The Federal Law "On Administrative Responsibility of Organizations for Violations of Legislation in the Use of Nuclear Energy" (N 68-FZ) was adopted by the State Duma on 14 April 2000 and signed by the President of the Russian Federation on 12 May 2000. This Law is a legislative basis for Gosatomnadzor's activities for establishing of the system and regulatory documents on sanctions and enforcement. The Russian version of the Law was handed over to the NRC representatives in September 2000.

#### **Future activities:**

NRC and Russian specialists will continue to communicate on issues related to the development of a legal framework for nuclear regulation in Russia. In particular, Gosatomnadzor's specialists will provide information regarding the status of draft Russian laws under development and provide copies as appropriate. At the request of Gosatomnadzor of Russia, NRC legal specialists will review draft laws provided by Gosatomnadzor of Russia and provide comments for consideration of Gosatomnadzor's specialists in developing subsequent version of draft Russian laws.

NRC and Russian specialists will continue to communicate on issues related to the development of an enforcement system for nuclear regulation in Russia. RF Gosatomnadzor's staff is developing a system of sanctions and enforcement consistent with the 14 April 2000 Law. NRC provided RF Gosatomnadzor background information on former NRC Enforcement Policies. In January 2001, RF Gosatomnadzor will provide NRC a list of issues for further discussion and propose a plan and schedule for further consultations with RF Gosatomnadzor in development of the regulatory documents in the area of sanctions and enforcement.

## **II. REGULATORY ACTIVITIES**

### **A. Licensing - Reactors**

A workshop on licensing of digital microprocessor-based instrumentation and control systems applied to NPPs was conducted in Moscow from November 27 through December 02 2000 for the RF Gosatomnadzor staff and other nuclear safety related institutes.

#### **Previously approved plans**

1. It is planned that future cooperative activities will be conducted according to the same "partnering" model that has already been used for preparation of two workshops. The present model encourages the active participation of RF Gosatomnadzor specialists during the work development meetings at the NRC in partnership with NRC staff to determine the level of detail of consultation needed for the activity, the background of the targeted audience, and particular topics for emphasis. The target areas of consideration include reactor projects, technical specifications, plant change and modification process (10 CFR 50.59), how to apply new standards to currently operating plants (technical and environmental), maintenance and quality assurance and materials and plant equipment aging.
  - a. The NRC staff's contractor(s), one or more National Laboratories [for example, Brookhaven National Laboratory (BNL)], will participate in the development meeting
  - b. Subsequently, NRC staff experts, accompanied by contractor representatives, will participate in consultation activities to be held in Russia]. RF Gosatomnadzor, laboratory, architect/engineer and plant operator representatives may participate in the activities; in addition, RF Gosatomnadzor representatives may play a more active role in the resenatation of material to reflect current practices in Russia.
2. Licensing Reviews for previously Operating Plants/Modernization, Amendment Screening and Plant Design and Equipment changes (RF Gosatomnadzor in the US and NRC in Russia). Specific issues to plan work in this area:
  - a. Licensing of Modifications at NPPs, use of the PSA results in this process.
  - b. Methods and procedures for review and analysis of NPP equipment (components) compliance with regulatory requirements for materials, welds, inspection techniques, strength, diagnostics, etc. on the basis of NUREG 800 and others.
  - c. Methods and Procedures for certification of NPP designs including certification of equipment and technology according to CFR 52.
3. NRC will develop further consultation activities with RF Gosatomnadzor addressing how the Standard Review Plan (SRP) detailed review criteria can be considered by RF Gosatomnadzor to develop guidelines for licensing the operation/modernization of existing NPPs, where design information does not fully correspond to the level of design information addressed in the document "Requirements For Safety Justification Report for NPPs with VVER-Type Reactors."

## **New Initiatives**

### **Regulatory Review of In-Depth Safety Assessments (ISAs)**

RF Gosatomnadzor requested NRC assistance in developing the methodology for the independent review of in-depth safety assessments for NPPs which are being developed under a program supported by DOE. NRC agreed to provide:

1. NRC documents, which will be made available to RF Gosatomnadzor at no cost, and
2. NRC expertise and experience, which could be made available through electronic communications and technical meetings if necessary. To the extent that NRC's funds are insufficient for the conduct of such activities, DOE has offered to provide logistical support, including travel expenses for Russian participants.

The DOE representative reported that recent inquiries with EBRD indicate that the Nuclear Safety Account has some funds set aside for the review of Kursk and/or Leningrad ISA's. NRC will coordinate its efforts with the EBRD.

### **Participation in U.S. Sponsored Forums**

The NRC intends to fund the participation of one or more RF Gosatomnadzor specialists at U.S. sponsored venues in 2001, such as the Water Reactor Safety conference, the Regulatory Information Conference, and American Nuclear Society conferences.

## **B. Oversight**

### **Reactor Inspections**

#### **Results to Date**

Brief discussions were conducted at RF Gosatomnadzor Headquarters in September 2000 on regulatory program changes in the areas of inspection, assessment, and enforcement processes in the U.S., based on a risk-informed and performance-based approach.

#### **Previously Approved Plans**

Consultation on RF Gosatomnadzor Research Reactor Inspection Program [NRC in Russia]. (One NRR direct assistance specialist, two NRR research reactor inspection and licensing specialists, and an interpreter) will visit Moscow for up to 2 weeks to consult on possible improvements to RF Gosatomnadzor inspection procedures/guides for Russian research reactors. RF Gosatomnadzor will send NRC examples of its current research reactor inspection procedures at least 3 months in advance of the visit.

### Inservice Inspection Observations

The NRC will identify opportunities for RF Gosatomnadzor staff to observe inspections in the US so that they can become familiar with the US performance-based approach. Activities could be conducted similarly to those conducted previously. Activities include reviewing Master Inspection Plans, securing regional cooperation, arranging for a contractor or NRC Headquarters escort, conducting an orientation to the inspection program at Headquarters, and arranging for observing an on site inspection.

### Participation in NRC technical training center courses

The NRC will provide course materials from training courses given at the NRC's Technical Training Center in Chattanooga, TN. These courses include, but are not limited to : Fundamentals of Inspection Activities; Technology of Non-Power Reactors, and PSA for Inspectors.

## **New Initiatives**

### Participation in IAEA Meeting on Inspections

RF Gosatomnadzor requested NRC to conduct a workshop on its risk-informed inspection program. If NRC hosts the planned IAEA workshop on inspections within the regional program on technical cooperation and presents its new inspection program in some depth, the workshop should be sufficient. Otherwise, NRC will arrange for a separate workshop.

After conducting the workshop, RF Gosatomnadzor will discuss the necessity of introducing changes in its inspection procedures, and, if necessary, will request further consultations with NRC.

## **C. Materials**

### Fissile Material Safety Licensing and Inspection

#### **Results to Date**

NRC provided RF Gosatomnadzor a copy of the final 10 CFR Part 70 rule that was published in September 2000 and a copy of the final version of NUREG-1718, Standard Review Plan for the Review of an Application for Mixed Oxide (MOX) Fuel Fabrication Facility" dated August 2000.

As a result of NRC budget constraints, no fissile material safety licensing or inspection activities were undertaken during FY 2000. NRC provided to RF Gosatomnadzor some tables of contents and web site links for such NRC regulatory documents as 10 CFR Part 70 Subpart H, NUREG-1520 (the draft standard review plan (SRP) for review of an application for a fuel cycle facility license), the MOX SRP, and the revised fuel cycle facilities oversight program.

## **Previously Approved Plans**

The following previously approved plans will be re-examined in light of the January 2001 meeting described under "Future Plans".

In December 1999, NRC accepted the following initiatives proposed by RF Gosatomnadzor, to the extent that resources are available and the activities, where necessary, can be coordinated with the other US Government agencies involved. It is understood that within each activity title, the priority of the tasks is in the order the tasks are listed.:

### **I. Legal basis**

A. Support RF Gosatomnadzor development of safety regulations for the following stages of plutonium disposition (in coordination with US DOE):

1. plutonium conversion and MOX fuel fabrication;
2. MOX fuel management during its use at nuclear power plants;
3. Management (storage, conditioning, final disposal) of spent MOX fuel.

B. Workshop on regulation of modification, reconstruction and modernization of fuel cycle facilities.

### **II. Licensing**

A. Workshop on criteria and procedures of safety evaluation in licensing dry nuclear spent fuel storage and relevant transportation.

B. Workshop on licensing and regulation of activities related to MOX fuel fabrication.

### **III. Inspection Strategy and Practice**

A. Workshop on decommissioning of fuel cycle facilities, including NRC inspection practices in the areas of radiation protection of nuclear installations, equipment decommissioning and management of radioactive wastes generated by fuel cycle facilities.

B. Joint inspection on nuclear facility sites and oversight of their activities at all stages of plutonium disposition (in coordination with DOE).

## **New Initiatives**

It was agreed that NRC attendance at a meeting being hosted on January 29-30, 2001 in Moscow would be useful. RF Gosatomnadzor will extend an invitation to NRC to attend the meeting. The purpose of the meeting is to coordinate a cooperative program among the participants. One aspect of the meeting will be to define the NRC regulatory role with respect to assisting RF Gosatomnadzor on MOX-related topics within the larger framework of support

that RF Gosatomnadzor is receiving from the international community. One possible role is for NRC to perform an independent review of regulations that are developed by RF Gosatomnadzor. Notwithstanding the outcome of the January 2001 meeting, the NRC would need additional information in order to assess resource implications.

RF Gosatomnadzor also indicated that it would seek NRC assistance in MOX inspection-related work such as developing inspection procedures and sharing of inspection results on nuclear facility sites and oversight of RF Gosatomnadzor activities at all stages of plutonium disposition (in coordination with DOE). This may include participation of RF Gosatomnadzor personnel on NRC MOX inspections.

## **Material Control, Protection and Accounting**

### **Results to Date**

Due to lack of funding, and outstanding issues related to funding, none of the activities requested below were completed during 2000.

### **Previously Approved Plans**

In December 1999, NRC agreed to undertake the following activities requested by RF Gosatomnadzor to the extent funding for these activities was made available by DOE:

#### **I. Legal basis**

A. Support to RF Gosatomnadzor in its development of Federal Regulations for MPC&A of radioactive substances (RS) and radioactive waste (RAW).

B. Support to RF Gosatomnadzor in its development of regulatory documents for organization and implementation of the oversight of MPC&A of RS and RAW, including:

1. NRC comments on draft RF Gosatomnadzor Provisions on the vulnerability assessment of physical protection systems;
2. NRC comments on draft RF Gosatomnadzor Provisions on use of instrumentation and control means to check existence of nuclear materials at nuclear installations.

Clarification, through discussions between RF Gosatomnadzor and NRC, of RF Gosatomnadzor's intent in items A and B above will be needed before support for the specific tasks can be requested from DOE.

C. NRC comments on the draft RF Gosatomnadzor Standard Instruction to review the results of inventory-taking of nuclear materials at fuel fabrication plants for VVER-type reactors;

## II. Licensing

- A. An MPC&A seminar be developed and conducted for Gosatomnadzor of Russia and facility representatives in St. Petersburg, Russia, to address in particular issues on inspections, report writing, assessment of the status of MPC&A in the licensing process (approximately 20 Russian participants, 3-4 NRC participants, and 2 interpreters). It is intended that this workshop will assist in commencing the development and review of MPC&A facility plans at one or more Russian facilities in the near future.) (Formerly NRC-RF Gosatomnadzor Task 1-99)
- B. A physical protection workshop be conducted addressing NRC's methodology and assessment techniques (formerly known as operational safeguards response evaluation (OSRE)) in Yekaterinburg (Russia). (Formerly NRC-RF Gosatomnadzor Task 2-99)

## III. Inspection Strategy and Practice

- A. Participation of NRC representatives in the accompaniment of Gosatomnadzor's inspectors in a physical protection inspection at the Tomsk University nuclear research reactor. (Formerly NRC-RF Gosatomnadzor Task 4-99)
- B. Workshop be conducted by NRC on physical protection inspection practices, followed by a RF Gosatomnadzor accompaniment of a physical protection inspection at an NRC-licensed facility in coordination with DOE. (Formerly NRC-RF Gosatomnadzor Task 6-99)

## Status of DOE Funding of NRC's MPC&A Efforts with RF Gosatomnadzor

On July 7, 2000, NRC signed an MPC&A Interagency Agreement with DOE, which provided a limited amount of funding to support cooperative activities with Russia. During August 2000, DOE requested NRC to send a representative to observe a joint two-week MC&A inspection exercise between DOE and representatives of the Russian regulatory agency GAN at Argonne National Laboratory - West in Idaho during September 2000 to determine if it was appropriate for NRC to participate in this type of exercise in the future. (During the exercise, DOE created some items of non-compliance with regard to DOE's MC&A Orders, and the 2 DOE and 12 GAN inspectors separately conducted the inspection and wrote up the results in separate inspection reports.) An NRC representative attended the second week of the exercise, funded by DOE under the IA, and determined that, although the exercise was useful for the GAN representatives to compare their inspection methodology, results, and report to that of DOE, it would be difficult for NRC to participate in this activity in the future unless NRC consented to conduct the inspection to DOE requirements, rather than 10 CFR requirements.

An NRC MC&A staff member participated in DOE meetings with both GAN and MINATOM during October 30 - November 2, 2000. The U.S. delegation met with officials of MINATOM during the first two days to review the progress of MINATOM contractors in the development of three regulations that will establish requirements for managing nuclear materials in the Russian Federation. Also discussed was the progress MINATOM has made in the development of MPC&A regulations that DOE agreed to fund during its previous meeting with MINATOM during June 2000. The U.S. side met with officials of GAN during the last two days to review the

status of GAN's ongoing work on current MPC&A regulation development tasks funded by DOE, and to discuss both sides' perspectives on work to be initiated in the coming year.

These meetings resulted in the determination of a number of Russian regulatory documents for which NRC will be participating in the DOE review and comment effort over the coming year. (NRC has already provided comments on one of the GAN documents to DOE: "Regulation on State Oversight of the System for State Control and Accounting of Nuclear Material," DOE-GAN Task 10.4.2.) In addition, NRC was informally asked by DOE during this activity to assist DOE in reviewing the list of current GAN MPC&A regulatory documents to suggest other documents that GAN might develop to result in a complete regulatory framework. NRC will develop a timetable for this effort with DOE in the future.

However, the two meetings in Russia only addressed one area of expected NRC support to Russia. NRC's involvement in other areas, including training, particularly with regard to the development and support for GAN's inspection practices, have yet to be determined. NRC has requested that DOE provide funding for NRC to meet with GAN in the near future to determine a complete set of MPC&A activities for which NRC will provide assistance, in addition to the development of regulatory documents, and on the basis of these discussions, support activities would be proposed for DOE's consideration. (The meeting would address the activities previously requested by GAN listed above, as well as any additional requests.) NRC is awaiting DOE's response to this request.

### **III ANALYTICAL TECHNIQUES AND METHODS**

#### **A. Probabilistic Risk Assessment Studies**

##### **Results to Date**

According to the agreement reached during the annual meeting of NRC and Gosatomnadzor representatives in December, 1999, the four-week working session was conducted at BNL in March-April 2000. Russian members of the project and NRC experts participated in its work. The computerized probability model of the first level for the internal initiating events for Kalinin 1 was completed during this session. At the same time the project technical documentation for internal initiating events (the main report and a set of the appendices), analysis of fires, floods and earthquakes (reports on each subject) was completed. All documents were developed in Russian and then most of them were translated into English and sent to NRC. Translation of the rest of the documents into English was finished in the summer and they also have been sent to NRC.

During September 12-14, 2000, the meeting of Project Administrators from the 6 Russian participating organizations and NRC was held in Moscow. The results of work during 1997-2000 were summarized. Both a working schedule up to June, 2001, and proposals for the working program beyond June, 2001, were developed.

##### **Future Plans**

The main tasks expected to be accomplished through June 2001 are:

- Completion of the Level 1 project documentation, both in Russian and English (mainly comparison of the texts and editing of the English versions), and their publication;
- Implementation of the initial phase of PSA level 2, including training in containment event tree construction and the MELCOR code, and quantification of two plant damage states
- Development by Gosatomnadzor of proposals describing how to use the PSA results in regulatory activities and identification of possible NRC assistance areas to support Gosatomnadzor of Russia in the implementation of such a program.

The work described above will start once NRC's EDO approves the six addenda to the current Implementing Amendments, which will enable NRC to enter into the contractual agreements with the Russian organizations. This approval is expected in December, 2000.

During the first half of 2001, a meeting will be planned in Moscow to assess progress on the work outlined above and to plan for future work which to begin after July 1, 2001. This new work be funded from FY2000 US AID funds and will require mutual approval of six new Addenda to the Implementing Agreements. It may cover some or all of the following areas: Additional Level 2 analysis, expanded fire and/or seismic analyses, Level 3 analysis, pressurized thermal shock analysis, or other specialized topics as mutually approved.

## **B. Operational Data Feedback**

### **Previously Approved Plans**

**Event Reporting and Analysis System for Research Reactors and Nuclear Fuel Cycle Facilities:** RF Gosatomnadzor proposes development of an automated event analysis and reporting system (AEARS) for use by research reactors and nuclear fuel cycle facilities. This system would provide for the timely collection and systematic analysis of operating events at facilities regulated by RF Gosatomnadzor. Major tasks include the development of regulatory guidance for event reporting, a database and methods for the systematic reporting of operational events, methods and procedures for the analysis of events, pilot testing of the system at representative facilities, and staff training on the system and its implementation. This work will be conducted in coordination with DOE.

## **C. Uses of Analytical Simulators**

### **Results to Date**

The project for development and delivery of analytical simulator to Gosatomnadzor of Russia was completed by delivery of the analytical simulator for NPP with RBMK-1000 to the North-European Regional Office of Gosatomnadzor of Russia. The software for this model was also installed in 2000 on analytical simulators located in Don Regional Office and HQ.

The following activities were implemented by SEC NRS staff within the program on technical support to Gosatomnadzor of Russia in introduction and use of the different analytical simulators of NPP units to train personnel, emergency mode modeling, event analysis and safety assessment:

Modeling of NPP operational modes for VVER-1000, including modes of normal operation with switching off and on of the major equipment and control systems and emergency modes according to the list of the design basis accidents.

Computation and analysis of transients for VVER-1000 units under incidents including analysis of the major equipment and control systems performance.

A report on the results of this work should be issued at the end of 2000.

The following procurements were be made:

1. The coaxial cable on the analytical simulator in Moscow was replaced with cabling compatible with that for the Emergency Response Center (ERC). This will provide data transfer between analytical simulator and ERC facilities where safety status of Russian NPPs is analyzed. This together with the software to be developed will allow Gosatomnadzor to use the analytical simulator as a tool for experts during emergency exercises and actual incidents.
2. The backup tape drive at the Moscow site was replaced.
3. An inoperative operator station monitor at the Novovoronezh site was replaced.

4. Two faulty Ethernet/IEEE 802.3 LAN transceivers at the Novovoronezh site were replaced.
5. Spare parts were purchased for GAN's analytical simulators. The ERC equipment was also repaired under the signed contract, namely copy machine, 2 overheads and multimedia projector.

#### **Previously Approved Plans**

1. VVER-440 (Kola) software for the simulator in Moscow should be procured.
2. The RBMK (Kursk) core model should be upgraded to reflect the new reactor core design at the Kursk NPP.
3. The Safety Parameter Display and the Off-Site-Tracking of Radio-nuclides capabilities should be added to the analytical simulators.
4. There will be a need in the future to consider software and hardware upgrades for all three of GAN's analytical simulators. This should be considered as the need arises and funding becomes available.
5. Upgrade the VVER 1000 simulator to include a model for radioactivity transport inside an NPP and a model for evaluating radioactive releases within the emergency protection zone in case of accident.
6. Continue contractor support for software maintenance for the VVER 1000 and RBMK 1000 models after the completion of the warranty period.

Currently funding is not available for this area. Gosatomnadzor of Russia has expressed interest in completing the above projects as soon as funding can be made available, with in the constants of the over all technical assistance program. If funding is made available, Gosatomnadzor of Russia has informed the NRC that the first three projects listed about are of the highest priority for work within the analytical simulator program.

## **IV EMERGENCY RESPONSE AND CONTINGENCY PLANNING**

### **Results to Date**

The limited funds available were used to implement one previously planned task from the current Task Plan (formerly "Completion Plan") involving creation of the Geographic Information System (GIS) for the Information Analysis Center -- or Emergency Response Center (ERC) -- of Gosatomnadzor of Russia. This work is the logical continuation of GIS development activities started in 1999. The main task for 2000 was to improve GIS to display and present NPP data needed for response to emergencies. II&IPD and its contractor, IBRAE-RAN, used Balakovo as a prototype and accomplished the following:

- Developed the data structure and presentation format;
- Improved GIS overview software;
- Provided for the Balakovo NPP:
  - Details of site layouts and the buffer area in electronic form;
  - Information on technical parameters of the reactor installations and safety systems;
  - Electronic diagrams of the radiation monitoring posts and evacuation routes.
- Provided information on the executive and legislative authorities of the Saratov Region. This information is now available in the ERC.

### **Future activities**

1. NRC and GAN will extend their Implementing Agreement for emergency response and contingency planning for an additional three years.
2. Implementation of activities from the Task Plan will continue. The following tasks have the highest priority:
  - Connect GAN to the Moscow fiber optic interagency channel and arrange for information exchange with the Rosenergoatom Crisis Center, the Minatom Crisis Center, and other Ministries and organizations involved in Russian emergency response;
  - Install software to calculate the transport of radioactive releases and resultant dose burdens;
  - Upgrade ERC computer hardware as required for new software.
3. NRC, GAN, and IBRAE-RAN will update the Task Plan.

## **V INFRASTRUCTURE**

### **A. Training:**

In conjunction with the Moscow Institute of Engineering Physics (MIFI), develop a two-year graduate program at the Master of Science level to train recent graduates in nuclear safety. Major efforts include the development of new course materials and conducting a pilot class for 5 to 6 students. It is planned to start the pilot class in September 2000.

### **B. Communications (Internet):**

NRC agreed to assist RF Gosatomnadzor in expanding its throughput capacity for the internet in order to have access to the full range of services as well as e-mail with appropriate security and to support a dual-language capability. Accordingly, RF Gosatomnadzor will prepare two proposed Statements of Work (SOW). These SOWs will be sent to NRC by March, 2001.

- a. One SOW will address the need to expand internet access. This SOW will describe the current condition of internet access at RF Gosatomnadzor and an analysis of the need for more bandwidth over the next 3-5 years. The SOW will include a configuration diagram of their present web system. The SOW will include technical and contractual options for meeting those needs, including cost estimates.
- b. The other SOW will describe the current structure and content of the current website, an analysis of needs over the next 3-5 years (including for bilingual capability for the external website) and of needs for an internal website. The SOW will include technical and contractual options for meeting the needs, including cost estimates.
- c. NRC will review the proposed SOWs for reasonableness and funding possibilities and communicate its findings to RF Gosatomnadzor within 45 days of the receipt of the SOWs from RF Gosatomnadzor.
- d. Following agreement between NRC and RF Gosatomnadzor on the SOWs, work will begin when funding is available (expected in June), assuming that the activity meets GAN's priority criteria.

**ANNUAL MEETING WITH  
NUCLEAR REGULATORY AUTHORITY OF RUSSIA  
DECEMBER 4-8, 2000**

**DELEGATION:**

Federal Nuclear and Radiation Safety Authority (Gosatomnadzor - GAN)

Alexander Gutsalov, First Deputy Chairman

Alexander Matveev, Director, Science and Technical Department

Andrei Vistgof, Director, Inter-regional Information Center

Irina Sokolova, International Relations Officer

State Department Interpreters:

Galina Holmes

Nicholas Berkoff

**SCHEDULE:****Monday, DECEMBER 4**

8:45	Commissioner Merrifield
9:30	EDO William Travers
10:15	Chairman Meserve
11:00	Commissioner Dicus
11:30	OIP Janice Dunn Lee

12:00                      Lunch

**(Rm. O-4B6)**

1:00 - 2:15	<b><u>Regulatory Activities:</u></b> - Licensing - NPPs - Oversight & Inspections: Inspection Bases and Implementation (NRR: Lee Banic, Barry Zalzman)
2:30 - 3:00	<b><u>Legal Basis: Legislation</u></b> (OGC: Stu Treby, James Lieberman)
3:00 - 3:30	<b><u>Regulatory Activities:</u></b> - Oversight & Inspections: Enforcement (OE: Bill Borchardt, OGC: Jim Lieberman)
3:30 - 4:30	- Licensing - Fuel Cycle (NMSS: Barry Mendelsohn) - Licensing - Nuclear Materials - Non-Fissile (NMSS: Barry Mendelsohn)

**Tuesday, DECEMBER 5**

**(Rm. O-4B6)**

- 9:00-9:30 **Regulatory Activities:**
- Fissile: MPC&A  
(NMSS: Mike Kelly)
- 9:30-10:45 - Fissile: Mixed Oxide Fuel  
(NMSS: Drew Persinko)
- 11:00-11:30 Commissioner Diaz
- 11:30-12:00 Commissioner McGaffigan
- 12:30-2:00 Lunch hosted by Commission  
(Commission Dining Room, 18<sup>th</sup> Floor)
- 2:15-4:30 **Analytical Techniques and Methods to Support Regulatory Activities**
- Codes
  - PRA Studies (Kalinin)  
(RES: Tom King, Mary Drouin, John Lane)

**Wednesday, DECEMBER 6**

**(Rm. O-4B6)**

- 9:00-10:30 **Analytical Techniques and Methods to Support Regulatory Activities**
- Uses of Analytical Simulators  
(RES: Farouk Eltawila, Sher Bahadur)
- Infrastructure**
- Training
  - Communications  
(Joe Himes: IRO; W. Beecher; OCIO: Jim Shields, Walt Oliu)
  - Data bases
  - Hardware upgrades
- 11:30-1:30 - Lunch
- 1:30-3:00 **Emergency Response & Contingency Planning**  
(IRO: Joe Himes)

**Thursday, DECEMBER 7**

**(Rm. O-4B6)**

- 10:00-12:00 - Additional program discussion
- Review and revise Memorandum of Meeting

**(Commission Conference Room, 1<sup>st</sup> Floor OWFN)**

- 1:30-4:30 **Interagency discussion**

**Friday, DECEMBER 8**

**(Rm. O-4B6)**

8:30-1:30 - Review and revise Memorandum of Meeting

**(18<sup>TH</sup> Floor Conference Room)**

3:00 - Principals sign Memorandum of Meeting  
(W. Travers, A. Gutsalov)