



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

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SUBJECT: CHAIRMAN JACKSON'S TRIP REPORT ON VISIT TO FRANCE,
AUSTRIA, THE CZECH REPUBLIC, AND UKRAINE

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December 20, 1995

MEMORANDUM TO: The File

FROM:

Shirley Ann Jackson

SUBJECT:

TRIP REPORT ON VISIT TO FRANCE, AUSTRIA, THE CZECH
REPUBLIC, AND UKRAINE

Summary:

On September 12 - 28, 1995 I travelled to Europe for the 39th Session of the IAEA General Conference, and for bilateral discussions in France, the Czech Republic, and Ukraine. A detailed report (prepared by my staff) and relevant cables are attached which summarizes meetings which took place during this time period.

General topics of discussion centered on nuclear power issues related to licensing, plant aging, probable risk assessments, nuclear waste management, spent fuel storage and transportation, energy planning, utility restructuring, assistance to the republics of the former Soviet Union, preparations for the 1996 Moscow Summit by the G-7, regulatory effectiveness, and the strategic assessment and rebaselining initiative.

In the bilateral sessions held during the IAEA General Conference and elsewhere, I emphasized the need for countries to prioritize their activities and requests for assistance to NRC. I informed that these requests would be considered in the strategic assessment and rebaselining initiative underway at NRC which addresses both domestic and international activities. While NRC would not abandon its activities abroad, funds are decreasing which may require us to do things differently.

Highlights and special observations of the trip include the following:

- There was mutual agreement with officials from France regarding the need to continue bilateral interactions with more focussed efforts in areas such as safety of Soviet designed reactors, regulation of nuclear waste, nuclear safety in China and other developing programs. We agreed that it would be mutually beneficial to consider pursuing nuclear safety activities in a multilateral context such as a senior regulators association or forum.

- France continues to cope with the remnants of the Chernobyl accident, and holds strong views regarding the closure of Chernobyl. French officials explained the difficulties in sustaining their large nuclear power program if another accident were to occur. On the provision of nuclear safety assistance, the French expressed a strong desire in a need to avoid competition between U.S. and French vendors.
- France has built an impressive facility at Centre de l'Aube for disposal of low level waste. It became evident that research in low level waste transcends into how to resolve the high level waste problem since programmatic issues including public opinion and economic benefits will need to be addressed.
- In my bilateral discussions with Armenia, it was disheartening to learn of the country's energy plight and discouraging to hear of Armenia's intentions for the restart of Medzamor. Given limited natural resources, the Armenians continue to talk of building more reactors in their energy production planning. I restated U.S. position which opposes the restart of Medzamor and indicated that NRC would not be put in a position of declaring the reactor safe for operation.
- [REDACTED] The NRC however was complimented on the staff work and responsiveness to the Russian regulators needs.
- I hold a degree of optimism with regard to the energy program in the Czech Republic. The one utility is currently in a strong position and on a path to real market pricing. While there is much activity underway at the Temelin site, I warned that because the Temelin plant merges different technology and procedures, maintaining design basis documentation is extremely important.
- The Czechs requested NRC assistance in preparation for a new safety mission by the IAEA to Temelin to examine the compatibility of the Temelin backfits with other plant systems, and identify any unresolved safety issues. I made no promise of assistance but noted that the technical issues must be delineated by the Czechs with time schedules for resolution.
- The visit to Chernobyl was both enlightening and sobering at the same time. While the town of Slavutich displays signs of prosperity, such as new cars, fancy restaurant, and a well funded environmental center, the conditions at Chornobyl are deteriorating. Among other things, the plant workers are not equipped with any dosimetry. The radiation

EX.
4

plant director asked me to explore the possibility of an information exchange on current standards and practices in radiation protection. I have discussed this with DOE Secretary O'Leary.

- The conditions in Ukraine are dismal. Streets are not lighted and heat is available only during certain months. The regulatory organization is not well staffed, and working conditions and salaries continue to be poor.
- I was asked to explore the possibility of a visit by Ukrainian legislators to the U.S. to learn more about the regulatory process in the U.S. and the legal foundation for it. I have contacted USIA in this regard, and also informed Secretary O'Leary.
- While in Ukraine, I had several opportunities to emphasize U.S. support for the G-7 position which links closure of the Chernobyl by the year 2000 to the implementation of a comprehensive energy plan. An integral part of the plan is a proposed international nuclear safety and environmental center to be located in the new town of Slavutich near Chernobyl. I repeatedly emphasized the importance of developing an infrastructure that would create an economic climate for investing in nuclear safety.

Overall I believe the trip was a success. My discussions with senior nuclear officials were substantive and allowed me to better understand and appreciate nuclear issues from a European perspective. I had the opportunity to discuss NRC's mission and responsibilities, identify important regulatory issues, and express Commission views and priorities. I believe my regulatory counterparts gained some reassurance that NRC would continue to support international cooperation, and assistance would continue to the extent possible given the limited resources we face.

Attachments:

1. Summary of Meetings
2. Cable on France Visit
3. Cable on Bilaterals at IAEA Conference
4. Cable on the Czech Republic Visit

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Summary of Meetings

FRANCE

The visit and discussions are documented in Paris 23100 dated September 27, 1995 at Attachment 2.

1. Meeting with Mr. Yannick d'Escatha, Administrator General, Atomic Energy Administration (CEA) on September 13, 1995.

Topics discussed included interim and long-term storage and disposal of nuclear wastes, status and review of the CAPRA and PHEBUS research projects, the French/German European pressurized reactor now under design, mixed oxide fuel development, the prospects for new plant orders in the U.S., nuclear safety assistance to republics of the Former Soviet Union (FSU), and nuclear cooperation in China. Chairman Jackson proposed that the U.S./NRC and France/CEA partnership be strengthened which would focus on safety items of mutual interest.

2. Meeting with Mr. Giles Menage, Chairman of the Board, and other members of Electricite de France (EdF) on September 13, 1995.

EdF staff provided briefings related to nuclear safety, nuclear operations, use of MOX, cooperation with China, and perspectives on G-7 activities.

EdF staff engaged in a brief discussion regarding the use of indicators as performance measures. It was noted that availability and safety are areas needing reconciliation. Mr. Claude Frantzen, General Inspector at EdF, raised the topic of whether regulations should be standardized. Chairman response to this question included the need for a strong regulatory body with standards set high enough to meet international norms, and use of the nuclear safety convention to set the baseline. The French noted that one thing to avoid was setting two types of standards (i.e., one for the developed and another for the less developed). After all, safety is safety.

EdF officials presented an overview of the French program. Standardization and maintenance was discussed and it was noted that PRA modelling is used not for quality assurance purposes but for prioritization and comparisons. The French believe it is a bit premature to use PRA in anything other than a lab setting. Chairman Jackson responded that a distinction needs to be made in PRA between operations and regulations.

With respect to Pu recycle, EdF noted that seven reactors are currently licensed to use MOX fuels, but there are plans to increase the number. While other fission products can be vitrified and stocked, and the French are considering permanent storage, they also believe it is important to keep the MOX option open. Chairman Jackson explained the current situation in the U.S. regarding storage of spent fuel and efforts to site a repository at Yucca Mountain. She indicated that some utilities are utilizing dry cask storage which the NRC considers safe. She discussed proposed legislation before the U.S. Congress and noted the fluidity in the U.S. waste program. With respect to MOX fuel, Chairman Jackson indicated that the issue was being considered in the context of plutonium disposition from weapons material, an issue of importance facing the Administration.

EdF noted many problems with the Super Phoenix breeder reactor which they attribute to bad choices and organization. The reactor will likely never operate at full power and for the moment is being considered for scientific study purposes. The French agreed with the Chairman's comment regarding the need for closure of the fuel cycle if there is to be a future for nuclear power.

Nuclear safety in China was discussed with the French expressing the need to continue propagating a safety culture. While the Chinese are quick learners, the French noted that currently there is no interchange between staff at Daya Bay and Qinshan. There is no consistency in the Chinese program, and NNSA, the Chinese regulatory authority, is ineffective. EdF is trying to move China towards acceptance of international safety standards. While the French speculate that China will maintain international norms, China, nevertheless, is considered high risk, in their view.

With regard to G-7 issues, the French do not favor the extension of unsafe plants. They emphasized the need to develop a synergy between FSU operators and the safety authorities. The French noted that among other things, they faced competition for business in the FSU from U.S. companies. They believe the G-7 recommendations need to be revised with a more selective approach. Furthermore, the G-7 needs to define common principles and approaches and Western authorities need to work more closely to pressure the shutdown of unsafe Soviet designed reactors.

Chairman Jackson concluded the meetings by noting that there are few difference between the U.S. and France on nuclear safety issues, and while solutions to problems may vary slightly, overall our partnership should forge ahead to

define common approaches, and propagate the need for a strong safety culture worldwide.

3. **Meeting with Philippe Vesseron, Director, Institute for Nuclear Protection and Safety on September 14, 1995.**

While Dr. Adolf Birkhoffer was not available to attend the meeting as originally scheduled, Mr. Vesseron explained the relationship and joint projects between IPSN and the German research organization, GKRS, headed by Dr. Birkhoffer. Germany and France have essentially created a federation for nuclear research projects, which helps to define a common approach to nuclear safety issues in Europe. Mr. Vesseron noted that the U.S. contribution to work in the Phebus project was important.

Chairman Jackson addressed the current situation at NRC where licensing activities have diminished and there is more of a focus on facility operations. Plant aging is a serious issue confronting the nuclear plant operators. In light of a rapidly changing environment, the Chairman discussed the strategic assessment and rebaselining initiative at the NRC which will help us make more effective use of declining resources. The assessment will cover international activities including NRC'S relationship with nuclear programs both emerging and maturing worldwide. In her view, there is a need for the U.S. and other western countries to go beyond severe accident research, and start collaboration on projects related to risk assessments and aging.

The nuclear safety convention was discussed not only as a motivation to move other countries down a common path, but also in terms of sending a consistent message. The peer review concept of the safety convention could be very robust if well funded. Chairman Jackson suggested a meeting of chief regulatory officials to discuss, among other things, the interplay of issues related to the safety convention. Japan, Germany, France, and the U.S. should take a leading role in demonstrating the need for a strong national nuclear authority, and define how the IAEA would intersect in the peer review process. Mr. Vesseron noted that the IAEA has a window of opportunity with the establishment of the new nuclear safety directorate.

On the issue of Ukraine, the French noted that while Slavutich is important, it is their view that Minister Kostenko wants large projects at the center to employ the local population. Both the U.S. and France are in agreement that this was not acceptable. Chairman Jackson indicated that there is a need to build in engineering expertise at the center and that the flow of information from Ukraine particularly on health effects, needs to be accurate.

Therefore, a health effects project would be ideal. While Ukraine must take the lead, there is also a need at some point to carefully integrate the Russians into the work at the center. The Chairman noted the Russians need to be pushed to provide better data from the Chornobyl accident which is not solely based on Russian motivation to justify the use of their technology (i.e., RBMKs).

The French noted that they are beginning to see Russian influence reinstated in countries such as the Czech Republic, Ukraine, and Bulgaria. This is attributed to Russian assistance in the completion of reactors.

4. Meeting with Mr. Claude Mandill, Director General for Energy and Resources, Ministry of Industry on September 14, 1995.

The discussions focussed on fuel cycle issues and future energy mix in France, and the nuclear safety summit.

Mr. Mandill noted that nuclear power contributes to approximately 70% of the electricity production in France. While there is no foreseeable increase for nuclear power generation in the near term, France will likely see some increase in natural gas, but not coal to meet peak demand. Renewables such as hydro and biomass are also under consideration. France does not expect to see the European Pressurized Reactor (EPR) built before the end of the century. On the continued use of MOX fuels and waste issues, Mr. Mandill noted that the 1991 law allows for continued studies on containment, spent fuel, and waste, and that the French Parliament will make a formal decision on the kind of waste repository France will build in the year 2006. With respect to reprocessing and recycle, Mr. Mandill indicated that commercial/economic interests have changed and that there was now the view that environmental reasons should be factored into the rationale for continued use of separated materials. He noted that 70 to 80% of spent fuel is reprocessed and that France has not considered what to do with spent MOX fuels. Mr. Mandill invited Chairman Jackson to visit the La Hague facility in her future trips to France.

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Chairman Jackson believed President Kuchma's letter was encouraging and about as close to a commitment to close Chernobyl as one could obtain. She expressed that view that the summit should focus on nuclear safety and less on individual reactors. Chairman Jackson also noted the need to emphasize the importance of safety and the role of a strong regulatory authority.

Chairman Jackson gave a brief overview of the nuclear energy situation in the U.S. noting that the NRC has one more license to issue (Watts Bar) which would probably be the last facility licensed in this century. The shelf life of the new evolutionary reactor designs have been extended and utility restructuring is occurring in many organizations in the U.S. Plant aging and waste, are major issue facing the NRC and the Chairman discussed the initiation of the strategic assessment and rebaselining activity which among other things will help affirm and reaffirm the bases for which the NRC operates. In response to Mr. Mandill's concerns regarding the future of nuclear power, Chairman Jackson noted that in the U.S. there will be no nuclear industry if there is no NRC.

5. Meeting with Mr. Andre-Claude Lacoste, Director, Directorate for the Safety of Nuclear Installations (DSIN) on September 14, 1995.

Mr. Lacoste provided an overview of the DSIN noting that he has access to a total of 550 staff to help support the mission of the organization. His group is responsible for nuclear reactors and other fuel cycle installations, and waste disposal. There is a standing advisory group (similar to our ACRS), which provides advise and counsel. Particular areas of concern include steam generators, high burnup fuels, severe accidents, screening software problems, and probable risk analysis. He noted that the French have difficulties with PRA and raised questions regarding the U.S. approach. Chairman Jackson recognized that risk methodology needs further work particularly in the areas of human factors which is not well understood, and high burnup which is not well developed. She discussed work with EPA including risk harmonization and how differences are resolved in areas such as emissions for air, groundwater, and radionuclides, and enforcement policies. In addition, she noted the move towards less prescriptive and more performance based regulations. These and other important issues are being addressed in the strategic assessment and rebaselining activity at the NRC. Mr. Lacoste indicated that he would be holding meetings with the Minister for Environment and he wanted to learn more about managing the issues of nuclear materials and wastes.

Chairman Jackson and Mr. Lacoste voiced similar views regarding the need for more frequent and more standardized senior regulators meetings. Mr. Lacoste believes that such a group should be limited to those participating in the NEA since there are too many countries involved in the G-24 and in the IAEA, and suggested that meetings should be structured informally (i.e., no notes). Chairman Jackson indicated that this would be an issue that she would followup on.

On nuclear wastes issues, Mr. Lacoste noted that there are different mechanisms for treatment of wastes. In France, authorized releases are managed by ALARA. Mr. Lacoste noted that he has visited Yucca Mountain. Chairman Jackson outlined the waste program in the U.S. and noted that if there is no political support, there will be no repository. Proposed legislation before the Congress could change what we are currently doing.

6. Meeting with Mr. Jean Syrota, President of COGEMA on September 14, 1995.

Mr. Syrota provided a comprehensive briefing on the organization and activities of COGEMA which includes uranium mining, processing, enrichment, reprocessing, and vitrification. He indicated that a second MOX fuel plant is

being considered either at La Hague or Marcoule. Mr. Syrota noted that a group of French Parliamentarians would be visiting the U.S. on October 23 and was planning to visit the NRC. Chairman Jackson indicated that she would be happy to receive them, and would also like to visit La Hague in the future. She was interested in MOX fuel as it pertains to issues currently under consideration by the Executive Branch regarding disposition of plutonium from dismantled weapons. This could have impact on commercial facilities under NRC jurisdiction.

7. Meeting with Mr. Maurice Allegre, President, Centre de l'Aube on September 15, 1995.

Mr. Allegre presented an overview of the waste management program in France which began over 20 years ago. His organization has a budget of \$200 million, with 99% of revenues coming from waste generators. Centre de l'Aube was built in 1992 after the Centre de la Marche site was filled with over 500,000 cubic meters of low level waste. Centre de l'Aube has a capacity of 1 million cubic meters with a life expectancy of 100 years. All low and medium level waste in France will be disposed at this site which was selected for its favorable geology. The site is considered a zero release center. Education of the public played a prime role in selection and support for the center. The public is allowed on site since the French believe credibility is everything. The government strongly believes in living up to its commitment to the public. 500 people are employed at the site which required \$300 million for construction and \$6 million to the local community.

Chairman Jackson toured the Centre de l'Aube facility which has extensive safety features engineered into the facility design, such as discrete concrete vaults, monitored packaging, and collection of rain water. She also viewed the waste compaction center, control room, and public information center.

8. Meeting with Mr. Yves Kaluzny, Director of ANDRA on September 15, 1995.

A full discussion pertaining to waste issues covering treatment to site selection took place between NRC and French officials. Mr. Kaluzny described the French waste repository siting program, and Chairman Jackson explained the status of the nuclear waste program in the U.S.

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Chairman Jackson invited Mr. Kaluzny to visit

EX. 42
5

the FFRDC facility in Texas where experts could brief on the work being done for NRC.

9. **Tour of the Nogent Nuclear Power Plant on September 16, 1995.**

Chairman Jackson, accompanied by Messrs. Menage, Frantzen, and Dupraz from EdF, toured the Nogent nuclear facility including the spent fuel pool, the safety system rooms in the auxiliary building, the turbine hall, and the control room. The plant was impressive in design, housekeeping, and knowledge demonstrated by the staff.

VIENNA

1. **Bilateral Discussions during the IAEA General Conference on September 18 - 19, 1995.**

Chairman Jackson participated as the alternate delegate for the U.S. at the 39th Session of the IAEA General Conference. In addition to her own bilaterals with regulatory officials from Canada, Spain, Argentina, the Czech Republic, Slovakia, Ukraine, Armenia, Hungary, India, and China, which are fully reported in Attachment 3, Chairman Jackson also was invited to participate in a number of bilaterals led by Secretary O'Leary. These included meetings with Director General Hans Blix, General Conference Chairman President Chuchai Kasemsarn, and representatives from the United Kingdom, Germany, Japan, Republic of Korea, China, and Russia.

In addition to the bilaterals, Chairman Jackson and Secretary O'Leary gave remarks at the Women's Event sponsored by Ambassador Ritch and DG Blix focussing on the role of women in the missions of the IAEA.

2. **Meetings with IAEA Secretariat Staff on September 22, 1995.**

Deputy Director General B. Pellaud, Department of Safeguards, and Chairman Jackson discussed organizational streamlining issues. For safeguards, this means utilizing unattended modes of verification such as cameras and remote monitoring equipment, environmental sampling which allows some degree of control over analyses, timely access, and simplifying inspections (i.e., fewer visits to reactors). His organization has challenged SAGSI to come up with cost effective safeguards alternatives. Mr. Pellaud discussed safeguards staff reactions to these proposals, indicating that the scientific bases for these alternatives have been demonstrated, and what remains is training and educating the staff of these alternatives.

Mr. R. Baschwitz, Deputy to DDG Semenov presented an overview of the Nuclear Energy and Safety division which is undergoing change with the creation of the new Safety division. His organization is currently responsible for issues relating to raw materials, fuel performance (e.g., high burn-up fuels, MOX fuels, and water chemistry), storage of spent fuels, plutonium use, and waste management. He expressed the view that safety assistance activities in Eastern Europe and the FSU need more funding.

Deputy Director General S. Sachi, Department of Research and Isotopes discussed the structure and functions of his organization noting that the budget for safeguards is equal to research and safety at the IAEA. Among other things, his work focusses on issues such as effluents in the sea caused by Russian waste dumping and food programs run in cooperation with the Food and Agriculture Organization.

Deputy Director General Waller, Department of Administration, conveyed to Chairman Jackson the importance the IAEA attaches to the work and assistance of the NRC. He was concerned about a perceived retreat from multilateral activities from the former NRC Chairman and hoped that this was not true. Chairman Jackson discussed the initiation of a strategic assessment and rebaselining at the NRC which will consider both international and domestic activities. She noted that in light of declining resources, we need to be in a position to better leverage what we do. She discussed the NRC licensing process for new reactor designs, plant life extension, annealing, and safety and economic issues. Mr. Waller explained the IAEA budget process which is done by consensus and generally puts safeguards issues against technical cooperation. He also indicated the vulnerability of "extrabudgetary funds". He noted that there is pressure for the IAEA to coordinate a comprehensive test ban treaty, and that there also is pressure to separate safety and promotional activities.

Deputy Director General J. Qian, Department of Technical Cooperation, gave an overview of his organization which is currently budgeted at \$17 million. A large part goes to support nuclear power plant safety, with the rest devoted to projects in less developed countries including building small labs, training, and sending experts. There are over 1,000 project at an average cost of \$44,000. Chairman Jackson asked questions related to criterion for model projects, sunset clauses, and performance standards.

3. Meeting with Director P. Danesi, IAEA Laboratory at Seibersdorf on September 22, 1995.

Dr. Danesi explained ongoing work at the laboratory which includes safeguards, isotope study in agriculture, physical and chemical determinations, and nuclear instrumentation. The clean lab currently under construction is funded largely by the U.S. safeguards support program and is scheduled to operate in 1996. The analytical lab employs 35 people and conducts training. Chairman Jackson toured the safeguards analytical lab, the isotope research lab, and viewed the new clean lab.

THE CZECH REPUBLIC

1. Visit to the Temelin Nuclear Power Plant Site and Discussion with Czech Officials on September 20, 1995.

The visit and discussions are documented in Prague 006105 dated October 2, 1995 at Attachment 4.

2. Meeting with Jan Stuller, SONS, on September 20, 1995.

After the Temelin site visit, Chairman Jackson met separately with Mr. Stuller and continued discussions on issues of mutual interest. With respect to energy planning for the future, the Czechs believe that nuclear provides more independence than other options. Coal in the Czech Republic has a high sulfur content and in addition to being limited in supply, burning coal would not be good for the environment.

[REDACTED] In addition to the backfits at Temelin, SONS was recommending safety upgrades at Dukovany. This is a multiyear project which is just getting started and will be financed through energy revenues. Backfits are related to safety factors and stem from knowledge gained by doing the plant analysis with Westinghouse at Temelin.

Mr. Stuller noted that Westinghouse fuel will essentially replace the core of the reactor and that this type of fuel will not allow a negative void coefficient. He indicated that while some core cabling has been done, the Czechs have not done any electric cabling. In addition, after experiencing several fires, plant staff now has fire watches.

Chairman Jackson noted that the Temelin schedule for loading fuel in 1997 was optimistic, given the scope of work left to be done. A huge job lays ahead with respect to design basis documentation. To fill the projected need of an additional

2,000 megawatts by the year 200, Stuller indicated that nuclear would be the likely option in spite of Austrian opposition.

3. Site visit to the Rez Research Center on September 21, 1995.

Chairman Jackson held discussions with Dr. Pazdera and other NRI senior managers on research activities at NRI followed by a quick tour of the institute. The visit covered the materials lab which house two research reactors and two hot cells. Experiments underway are related to determining embrittlement rates for major components at the two Czech NPPs. The facility utilizes high enriched material (up to 36%).

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UKRAINE

1. Meetings with Ukrainian Officials and Site Visit to Chornobyl

Chairman Jackson's meetings with Ukrainian officials focussed on two main themes, (1) nuclear safety, and (2) G-7 issues related to the closure of Chornobyl. Reporting is organized on these themes and documented in classified cables dated December 6, 1995, reference State 281663 and State 281664.

2. Press Interview at Chornobyl on September 25, 1995

After the visit to Chornobyl, Chairman Jackson participated in an unscheduled interview at the site near the sarcophagus. Chairman Jackson stated that the purpose of her trip to Ukraine and Chornobyl was to better understand the nuclear issues facing Ukraine and not to make judgments regarding the safety of Chornobyl.