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Report of the Secretary of Energy Advisory Board Working Group on Foreign Visits and Assignments

June 8, 1999

EXECUTIVE SUMMARY

In March 1999, Secretary Richardson requested that the Secretary of Energy Advisory Board form a Working Group to review the Department of Energy's Foreign Visits and Assignments program. He specifically charged the Working Group with assessing the policies and practices related to foreign visitors at the Department's laboratories, and assessing the balance between security and science.

The Foreign Visits and Assignments program administers the policies and procedures related to the presence of foreign nationals at the Department of Energy's sites. Foreign national visitors may be at a laboratory for as little as an afternoon for a meeting or tour while the stay of an assignee may extend from one month to two years. The Working Group found that the tangible and intangible benefits derived from these types of international collaborations are **essential** to the scientific and technological strength of the United States. Based on its review, the Working Group is confident that these types of collaborations, under the auspices of the Foreign Visits and Assignments program, **can** be conducted without jeopardizing national security and should be continued.

During the course of its review, the Working Group **did not** find that foreign visitors or assignees represent high security risks at the Department's laboratories. Although there is no known instance of a foreign visitor or assignee perpetrating espionage, there are cases of employees with security clearances compromising national security information. Measures currently being undertaken by the Department to address the highest risk areas also should provide an extra margin of protection against any potential compromises of information by visitors or assignees. In addition, the Department is making specific changes to improve the management and operation of the foreign visits and assignments program.

The Working Group examined these recent and proposed reforms to the visits and assignments program. The following selected recommendations from the report reflect this focus:

- The Working Group found that the Department's new overall management structure that aligns responsibility, accountability and resources, lends itself to the effective implementation of cross-cutting issues such as security. Within this new structure the Working Group supports the proposed delegation of responsibility to approve unclassified foreign visits and assignments to the Laboratory Directors, and to hold them accountable for those decisions. Further, the Working Group recommends that the new Office of Security and Emergency Operations be incorporated into the design and processes of the new management structure.
- The Working Group recommends a graded approach which balances security concerns with mission objectives.

- The Working Group recommends that requirements for foreign nationals who are short term visitors be distinguished from the requirements for foreign nationals with assignments to Departmental sites. Currently the same requirements apply to both visitors and assignees. The Working Group's recommendation is that indices checks be required prior to the assignment and arrival for foreign assignees from sensitive countries to all laboratories regardless of whether or not there is classified work conducted at the site.
- The Working Group recommends that policies and procedures be drafted that are specific to foreign visitors and assignees at multi-purpose laboratories with limited classified information. The group of laboratories currently meeting this criterion are Argonne National Laboratory, Oak Ridge National Laboratory, and Brookhaven National Laboratory.
- The Working Group recommends that in lieu of creating new lists, the Department use established designations and definitions for sensitive subjects and technologies to determine where nonproliferation or export control issues may arise.

The Working Group arrived at these and other recommendations based on several findings. Among the most essential findings was that foreign nationals make a substantial contribution to this country's scientific vitality and to the Department's ability to conduct the scientific research and development that underpins its four mission areas: Energy Resources, Science, National Security and Environmental Quality.

The Department is the nation's, and indeed the world's, largest supporter of research and development in the physical sciences and engineering. However, despite their considerable research and development role, the Department's laboratories conduct only one to two percent of the world's research and development (but produce a much larger fraction of the seminal advances in facility-based and interdisciplinary research.) Thus, the effectiveness of the Department's overall efforts rests essentially on leveraging the other 98 to 99 percent of the research and development done elsewhere in the United States and abroad by industry, universities, and governments.

Collaborations with foreign governments and scientists benefit the Nation by strengthening and speeding up the scientific process, enhancing understanding and allowing nations to pool resources to fund costly projects. In some areas, such as high energy physics, the trend is toward fewer, one-of-a-kind, facilities which by necessity are open to the international scientific community for research. In addition to intellectual gains, this approach saves United States tax-payers' money through cost sharing arrangements which eliminate the need for the United States to build duplicate facilities. To derive the benefits of these collaborations, however, there is an assumption of quid pro quo access to facilities in participating countries. The Working Group concluded that reasonable access can be afforded foreign national visitors and assignees without jeopardizing national security.

Also of significance is the Department's non-proliferation program with the Russian government which is totally dependent on collaboration among Russian and United States scientists and technicians. This program includes securing and safeguarding Russian nuclear materials which are of potential use for weapons, and the safe and secure dismantling of nuclear warheads. In addition, the Department supports employment alternatives for Russian scientists with expertise in weapons of mass destruction. This program keeps unemployed and under-employed Russian scientists away from jobs in countries that have or are developing nuclear capabilities.

International collaborations also contribute to the Department's ability to attract and retain the world's top scientists and engineers at its laboratories. The loss of these scientists, engineers and experts would have serious long-term implications for national security and economic well-being. Additionally, the prospect of severely restricting access to international experts would disadvantage the Department as it competes with industry, universities and other countries to hire the top scientific and technological minds.

The issue is not whether the Department has sound policies to protect information vital to national security; sound policies exist. The issue is whether the Department has the sound management practices necessary to **consistently** implement those policies over time. The Department must manage in a way that instills in each employee a sense of responsibility for protecting national security information. Its management approach also should accommodate the Working Group's finding that 'one size does not fit all' laboratories in terms of security plans. In fact, at some laboratories' managers must contend with different security needs within the site where classified research and large user facilities are both located on the grounds.

The Laboratory Operations Board, the U.S. General Accounting Office, and other groups have reviewed and provided findings and recommendations on how the Department could better manage its programs. The Working Group believes the Department's security concerns represent another example of the management challenges the Department faces. The Department of Energy now has in place security reforms related to physical systems, cyber systems, and human systems which will operate to protect against compromises in national security. However, as with any reform, the key to effectiveness resides with the management system to consistently implement them in such a way that the laboratories can fully engage in scientific pursuits in an environment which both protects national security and reaps the benefits from the contribution of foreign visitors and assignees.

Introduction

In March 1999, Secretary Richardson requested that the Secretary of Energy Advisory Board form a Working Group to review the Department of Energy's Foreign Visits and Assignments program. He specifically charged the Working Group with reviewing the policies and practices related to foreign visitors and assignees at the Department's laboratories, and assessing the balance between security and science. This document reports the Working Group's findings and recommendations.

The Working Group members endeavored to bring to this review the benefit of their collective experiences and to offer an objective assessment of the balance between the benefits of science and threats to national security. The Working Group concluded the most effective way to address the Department's security issues was in the context of the Department's missions, management, and operations. The basis of this systemic approach is for the Department to instill in its employees a sense of personal responsibility for protecting the nation's security interests, provide them with the required knowledge and tools, and support them with an effective management structure and management practices that reinforce individual responsibility and accountability.

The Laboratory Operations Board, the U.S. General Accounting Office, and other groups have reviewed and provided findings and recommendations on how the Department could better manage. The Working Group believes the Department's security concerns represent another example of the management challenges facing the Department of Energy. The Department now has in place security reforms related to physical systems, cyber systems, and human systems which will operate to protect against compromises in national security. However, as with any reform, the key to effectiveness resides with the management system to implement them in such a way that the laboratories can fully engage in scientific pursuits in an environment which both protects national security and reaps the benefits from the contribution of foreign visitors and assignees.

The Foreign Visits and Assignments Program

The Foreign Visits and Assignments program represents one element of the Department's overall security effort. The function of the Department's Foreign Visits and Assignments program is to administer the Department's policies that prescribe the terms and conditions of visits and assignments of foreign nationals to the Department's laboratories and other facilities.

The Working Group reviewed the foreign visits and assignments policy as of April 1, 1999, as well as changes proposed but not yet implemented in the Department's Counterintelligence Implementation Plan. The following outlines the program, including recent changes:

- The program's purpose is to manage the process of unclassified visits and assignments by foreign nationals to Department of Energy facilities except those exempted from the requirements.
- The program is designed to have foreign national visits and assignments conducted in a manner consistent with Federal and Departmental security policies and the security plans of the individual facilities.
- The program administers set criteria for approving visits and assignments which takes into consideration programmatic factors, security issues including results of indices checks, overall judgement and other factors.
- Responsibility for the program's implementation are distributed among the relevant Program Secretarial Officers and offices with responsibility for international research and development, safeguards and security, export control, intelligence, nonproliferation, and field operations.

- Application for visits or assignments by individuals from sensitive countries must be made and indices checks must be completed **prior** to the visit or assignment to facilities, except for exempted sites. (March 15, 1999)
- Unless included on the list of exempted sites, Department sites (laboratories, facilities, and special purpose offices) and operations offices must conduct indices checks on all sensitive country foreign nationals visiting or assigned to any area of the site or office, and on all foreign national visitors and assignees from any country who will have access to sensitive subjects while at the site or office, except as otherwise provided for in the Atomic Energy Act. The visitors or assignees must pass the indices check before they can be approved for admittance. (April 1, 1999)

This review was undertaken at a time of intense public, Congressional, and media interest in allegations that national security was compromised at one or more of the Department's laboratories. In conducting its review, the Working Group heard of no known case of a foreign visitor or assignee perpetrating espionage. Additionally, the Working Group found that both the Department and the Nation benefit greatly from the international collaborations facilitated by the program.

This Working Group is not the first to examine the Foreign Visits and Assignments program. Numerous reports on the Department's program were issued over the past decade. The Working Group reviewed the findings of these reports, focusing primarily on policy considerations. Although reviews have been critical of the Department's program management and its system for tracking visitors and assignees, recent reviews have acknowledged improvements in the Department's management. Consistently, the reports recognize the enormous benefits and contributions by foreign visitors and assignees to the Department's research and development efforts and to the accomplishment of the Department's missions.

As a basic principle, the Working Group recommends security requirements be dictated by the level of risk posed by specific locations, not the fact that classified information or work may exist elsewhere onsite. The Working Group adheres to the adage that the height of the fences should be dictated by the extent of the risks. We note that only 10 to 15% of the Department's research and development work is classified. This philosophy has the benefit of intensifying the security for the most critical information while supporting collaboration on non-sensitive research.

This approach is valid even at the weapons laboratories, where only about 25 to 30% of research and development is classified. At the Department's weapons laboratories a triage approach to physical security measures is used to isolate national security work from uncleared visitors and assignees. For example, Lawrence Livermore National Laboratory has implemented five areas of increasingly heightened physical security measures:

- *The Property Protection Area* is the fenced-in area surrounding the laboratory which serves to protect government property. In order to get onto laboratory property a color-coded identification badge issued by the laboratory is required.
- *The Limited Areas* are areas with additional fences and guards. An individual must have a Secret or Top Secret clearance badge, a PIN number, and a weigh-in check so that only one person enters at a time. Program examples include high explosives, Atomic Vapor Laser Isotope Separation (AVLIS), and some aspects of Inertial Confinement Fusion.
- *The Exclusion Areas* are the classified areas where projects associated with secret restricted data are located. Persons entering must be registered on special access lists and have an established "need to know."
- *The Protected Area* is the area housing the Super Block where special nuclear materials are kept. In a Protected Area there are more armed guards and heightened physical security measures including microwave detection beams.
- *The Material Access Area* is the smallest and most secure area of the laboratory. An individual must be scheduled and called in to gain admittance. There are extensive security measures and an individual must undergo a search procedure before and after suiting up and handling special nuclear materials.

Other weapons laboratories have similar physical security measures in place. No foreign national visitors or assignees may gain access to the Limited Areas, except under escort, and foreign nationals from sensitive countries never have access. When an uncleared person from **any** country is brought to a Limited Area, no one is allowed work on classified projects, even behind closed office doors, until the uncleared individual or delegation has left.

This approach is consistent with the Department of Defense's physical security guidelines. At the Department of Defense, the extent of security measures for a specific building or site is established by analyzing the potential threat to national security if security were breached and information compromised.

Following this philosophy, the Department's university-like laboratories that conduct no classified research have little or no security requirement beyond that required for the safety of personnel and property and the safeguard of sensitive information. A different system of security is called for at the multiprogram laboratories which have a limited number of classified projects. At these sites, there needs to be appropriate physical and cyber security measures in the areas where classified research is conducted. For example, there may be one or two buildings or rooms with security measures heightened beyond those in place elsewhere at the laboratory. Under this system, security is determined by the nature of the activities and programs conducted at each location.

The Working Group finds this graded regime to be a reasoned approach that offers maximum protection for the most critical information while allowing appropriate access to areas where the research is not classified. Given that there has been no known case of a foreign national visitor or assignee perpetrating espionage, the Working Group found no justification for more extreme measures which would inevitably dilute the focus from the areas of maximum threat.

Examples of the Department's overall effort to reform its security posture include emphasis on physical security, cyber security (e.g. computer firewalls, filters), and heightened attention to training and sensitization of those individuals working in the most sensitive areas and programs.

However, as with any reform, the management system is key to its effectiveness. Secretary Richardson recently adopted a new management structure for the Department's laboratory system. The Working Group found that the design of this new structure lends itself to effective implementation of cross-cutting issues such as security and it allows the Secretary to fully utilize the new structure to ensure the clear alignment of responsibility and accountability for security.

Within the context of this new structure, the Working Group supports the proposed delegation of responsibility to approve unclassified foreign visits and assignments to the Laboratory Directors, and to hold them accountable for those decisions. Further, the Working Group recommends that the new Office of Security and Emergency Operations be incorporated into the design and processes of the new management structure.

Among the Department's Office of Counterintelligence reforms is an effort that emphasizes the employee education component of security. In particular, priority is being placed on heightening scientists and engineers' attention and awareness of security when performing classified research. Counterintelligence is also focusing on laboratory employees who host foreign nationals, and laboratory employees who travel to conferences and seminars where they are likely to have contact with attendees from sensitive foreign countries.

The Working Group observed and was impressed by the briefings on security and threat awareness being presented to ALL laboratory employees. These briefings include the kind of information for which employees should be alert and how to report any suspicious behavior by individuals working or visiting the laboratory. This increased attention to awareness must be maintained over the long-term, and efforts by the laboratories should be periodically reviewed.

In addition, the laboratories have begun integrating their approaches to physical and cyber security. For instance the weapons laboratories are in the process of implementing a rule which requires two authorized classifiers to review requested information before it is sent to an operator who then can transfer the information via removable media (i.e. tapes, diskettes, etc.). These types of improvements add to the existing protection against any possible breach of security by a foreign visitor or assignee.

The proposed Counterintelligence Implementation Plan includes provisions related to Unclassified Foreign Visits and Assignments. **The primary principle of the Plan is to delegate responsibility to approve unclassified foreign visits and assignments to the Laboratory Directors, and to hold them accountable for these decisions. The Working Group strongly supports this approach and other principles being followed by the Department**

with regard to the Foreign Visits and Assignments program. However, it does have concerns about certain proposed specifics, and recommends the following changes:

In particular the Working Group recommends that Lawrence Berkeley National Laboratory be included among the laboratories exempt from the requirement for prior indices checks on visitors from all sensitive countries. The basis for this recommendation is that there is no classified research at Lawrence Berkeley National Laboratory.

The Working Group recommends that a distinct set of policies and specific procedures be drafted for foreign visitors and assignees at multi-purpose laboratories with limited classified information. The laboratories currently meeting this criterion of limited classified materials are Argonne National Laboratory, Oak Ridge National Laboratory and Brookhaven National Laboratory. Further, the Working Group suggests that review and approval of the draft policies and procedures for multi-purpose laboratories be undertaken by the new Field Management Council established as part of the recent management reforms.

Additionally, the Working Group recommends that there be separate policies for foreign visitors and foreign assignees. Specifically, it suggests that prior indices checks for all assignees from sensitive countries be required, as well as for assignees from any country who will have access to sensitive areas, unless exempted by the Atomic Energy Act. This requirement would also include foreign nationals assigned to laboratories with no classified work. This takes into consideration that assignees typically stay at a laboratory from one month to two-years, and therefore have much more interaction with laboratory personnel and equipment than regular visitors.

Sensitive Technologies

Also relevant to the Foreign Visits and Assignments program is the question of protecting sensitive technologies. As part of the reform measures the Office of Counterintelligence has asked each laboratory director to provide a list of "sensitive technologies or subjects" being worked on at the laboratory. The Working Group questions the purpose of creating lists of what it perceives to be ill-defined "sensitive" technologies or subjects. Lists of sensitive technologies and subjects already exist and appropriate security measures associated with the technologies and subjects covered are already in place.

Lists of these designations and definitions are found in the regulations of four agencies. The Department of Energy's responsibility for nuclear technologies subject to export control are delineated in 10 CFR Part 810 and those under the purview of the Nuclear Regulatory Commission are in 10 CFR Part 110. The Department of Commerce Export Administration Regulations are included in 15 CFR Parts 730 -774 and the Department of State International Traffic in Arms Regulations - ITAR (22 CFR Part 120-130.) These lists are transparent, well-established, and used throughout industry and government to identify and secure sensitive technologies. **The Working Group believes these security regimes are appropriate and sufficient, and that Department does not require a separate and unique approach from that utilized by other federal agencies.**

The Working Group acknowledges that there may be specific scientific and technological projects at the Department with potential 'dual-use' capabilities for nuclear weapons, but believes that if they are considered to have serious national security implications beyond those addressed by the existing definitions and regulations, these projects should be classified. The Department already has specific guidelines in place for handling classified projects. Adding an ill-defined category of "sensitive" technologies other than those already defined would be confusing and not uniformly enforced.

The Working Group found a recommendation made by the Openness Advisory Panel, in its [1997 report](#) consistent with the approach the Department should adopt:

"The Department should aim at narrowing the scope of protected information, while improving the protection of information that should be safeguarded ... The Department should encourage practices that minimize classification."

The Role of Science and The Contribution of Foreign Nationals

The Department of Energy is a science-based organization for which scientific research and development provide the underpinning for advances essential to support the Department's four missions: Science, National Security, Energy and Environmental Quality. In addition, the Department of Energy is the nation's, and indeed the world's largest supporter of research and development in the physical sciences and engineering. The success of the Department's research and development allows it not only to accomplish its missions, which are of vital national importance, it also contributes to this country's economic well-being.

In a May 6, 1999 speech, Federal Reserve Board Chairman Alan Greenspan credited the nation's "phenomenal" economic performance to improved productivity brought about by technological innovation. The Department has contributed to this technological innovation through its research and development efforts that have resulted in new materials, advanced computational processes, more efficient energy systems, greater understanding of the human biological system, and new tools to meet the needs of the nation.

There are persuasive arguments for preserving and encouraging the dynamics of this nation's research and development endeavors. Because of the significant role and contribution of the Department in this endeavor, decisions affecting the environment in which the Department conducts its research and development can have significant implications. The aim of this Working Group has been to advise the Secretary on how to achieve and maintain an environment conducive to scientific exchange and the tremendous benefits it offers while simultaneously protecting and strengthening national security.

Vital research and development and other mission-related activities are in large part conducted by the Department of Energy's contractor-operated laboratories and facilities. Over the past several decades the Department's laboratories have performed their missions with unequalled success among their peers, both within the United States and around the world.

Despite their considerable size, the Department's laboratories conduct only 1 to 2% of the world's research and development. Thus, the effectiveness of the Department's efforts rests essentially on leveraging the other 98 to 99% of research and development conducted elsewhere in the United States and abroad by industry, universities and governments. The Department benefits greatly from communication and collaboration with scientists and engineers conducting the balance of the world's research. Collaborations speed up the scientific process, enhance understanding, and allow nations to pool their resources and fund projects too costly for one country to bear.

The Department and its predecessor agencies have always gained from the contributions by foreign nationals to the intellectual life and vitality of the Department's laboratory complex. Beginning with the Manhattan Project, the importance of the contribution of foreign scientists to major national defense and scientific advances has been pervasive. For instance, human genome research, nuclear and high energy physics, neutron scattering and materials science, combustion research, environmental science including climate modeling, and astrophysics have benefited and continue to benefit from the contribution of prominent scientists from 'sensitive' countries.

International scientific and technological collaborations occur in many different forms. Department of Energy scientists, engineers, and other experts regularly visit and work at foreign laboratories as part of research projects and exchange programs. Similarly, foreign national scientists, engineers and other experts visit and work at Departmental and other government laboratories. International scientific meetings, the Internet and other opportunities also are used for the exchange of ideas across borders.

The nature of international collaboration at the laboratories varies widely. A large number of foreign visitors and assignees are attracted to the Department's laboratories because of one-of-a-kind user facilities. For example, in the area of high-energy and nuclear physics, the Fermi National Accelerator Laboratory in Illinois, the Stanford Linear Accelerator Center, the Thomas Jefferson National Accelerator Facility in Virginia and the Relativistic Heavy Ion Collider at Brookhaven National Laboratory (under construction) on Long Island, New York, offer scientists opportunities to use these world leading facilities to run their experiments and work with other scientists on particular areas of physics.

In all cases, these facilities were built as the result of multi-national collaboration involving the contribution of funds, expertise and fabrication of components. The result has been the availability of world-leading detectors and scientific instrumentation which are essential to the advancement of the nuclear and high-energy physics fields. To

derive the benefits of these collaborations, however, there is an assumption of quid pro quo access to facilities in participating countries.

Thanks to international collaboration, the Department operates user facilities covering a wide spectrum of scientific areas including condensed-matter, materials science, chemical, environmental, and biological sciences. For example, the neutron and photon (or synchrotron) facilities for which the Department is principal steward in the United States, are essential resources for advances in these areas of science that help contribute to new industrial, health, environmental, and security technologies. Likewise, foreign facilities afford researchers from the United States the opportunity to conduct research using equipment and collaborations unique to offshore facilities. For instance, at CERN, based in Geneva, Switzerland, there are some 500 scientists from the United States doing Departmental research and supporting construction of one of the newest unique facilities.

Some anecdotal examples are helpful in appreciating the importance of contributions derived from interactions with foreign nationals, guests and visitors, or from personnel assignments, some anecdotal examples are helpful. Foreign nationals comprise about 30% of the Stanford Synchrotron Radiation Laboratory (SSRL) on-site user community. Besides science, foreign nationals also contribute to the instrumentation and technology developments at SSRL which directly benefits the whole user community and furthers the mission of the laboratory. There are currently 20 synchrotron user facilities in operation or construction worldwide, the vast majority of which, like SSRL, are available to all users on an open basis.

There have been similar contributions at the Advanced Photon Source (APS) at the Argonne National Laboratory. Dr. Emil Trakhtenberg from Russia is an internationally recognized expert in the design and construction of accelerator-related instrumentation. He was in charge of designing vacuum chambers for insertion devices at the APS, where he developed a unique and innovative approach to the design and fabrication of the chambers. His vacuum chamber design which represents the state of the art in the field of synchrotron radiation instrumentation is now being adopted by major synchrotron facilities all over the world.

Another example from the Advanced Photon Source is Dr. Wenbing Yun from China, who developed and built the state-of-the-art x-ray microscope. This unique instrument has achieved the best-ever spatial resolution for hard x-rays which has several important applications in such areas as materials science, environmental science, and medical research. His contributions in the development of microfocusing techniques have helped make the APS a world leader in the field of x-ray science.

The recent Gordon Bell Prize for supercomputing won by the team from the Oak Ridge National Laboratory (ORNL) is a tribute to the value of collaboration with foreign national participation. The ORNL team was led by Malcom Stocks, now a U.S. citizen and ORNL Corporate Fellow, who joined the Laboratory first as a postdoctoral fellow from Great Britain. Other foreign nationals on the Oak Ridge team included Balazs Ujfalussy (postdoctoral fellow, Hungary), Don Nicholson, Xaioguang Zhang (China-PRC), a previous ORNL postdoctoral now at Pittsburgh Supercomputer Center, Yang Wang (China-PRC), and a previous Wigner fellow, Xindong Wang (China).

An example related to the Department's national security mission is Russian scientist, Natalia Zaitseva, who has helped Lawrence Livermore National Laboratory develop a technique to grow crystals essential for the National Ignition Facility (NIF). Using traditional methods, it takes two years to grow crystals needed for NIF, and they still face a low probability of reaching desired size or quality. With addition of Dr. Zaitseva's expertise, the Laboratory now has a process where crystals of the requisite quality can be grown in about six weeks.

The Department's non-proliferation work with the Russian government is totally dependent on collaboration among Russian and United States scientists and technicians. This program includes securing and safeguarding Russian nuclear materials which are of potential use for weapons and the safe and secure dismantling of Russian nuclear warheads. In addition, the Department supports employment alternatives for Russian scientists with expertise and experience in weapons of mass destruction. The purpose of this program is keep unemployed and under-employed scientists away from jobs in countries that have or are developing nuclear weapons capabilities.

These crucial national security programs require the Department's scientists to meet extensively with their Russian counterparts. The program's successes have been due to the Russian government allowing American scientists

access to highly sensitive Russian nuclear sites and information on its nuclear materials management and other sensitive programs.

Retaining a World-Class Scientific and Technical Workforce

Of critical importance for scientific collaborations at the national laboratories is their ability to attract and retain world-class minds. The United States relies extensively on foreign nationals -- whether they become citizens or not -- to keep the United States at the forefront of the technological developments that support the national defense and the economic well-being of the country.

One indication of the extent of the international dimensions of the scientific community is that foreign nationals presently account for approximately 46% of all graduate students in U.S. science and engineering programs. The two largest groups among the graduate students are from China and India, both on the list of sensitive countries. To unduly limit access to the Department's laboratories for foreign students and eminent scientists would serve to significantly diminish the level of scientific exchange and in the long run could jeopardize the country's security in a much different way. This viewpoint widely is shared by most U.S. scientists and policy makers. For example, a 1996 National Academy of Science study states:

"While some of these arguments are more compelling than others, the committee remains convinced that foreign students and long-term visiting researchers are an indispensable asset to U.S. University and federal laboratory research. As key members of U.S. science and engineering departments, foreign graduate students and postdoctoral researchers represent the underpinning of many advanced research projects."

Conclusion

The Working Group found that the Department of Energy is well aware that its laboratories are targets of intelligence activities - national security and industrial espionage. Threats continue to evolve and create new vulnerabilities, but the Department is improving physical systems, cyber systems, and most importantly -- human systems, to prevent future compromises in national security. The Working Group concluded that with sound security systems in place **and with strong and consistent management**, the laboratories can continue to host foreign national visitors and assignees **and** conduct science without compromising national security.

Findings and Recommendations

As a basic principle, the Working Group recommends security requirements be dictated by the level of risk posed by specific locations, not the fact that classified information or work may exist elsewhere onsite.

- **The Working Group recommends a graded approach which balances security concerns with missions objectives.**
- **The Working Group recommends that a distinct set of policies and specific procedures be drafted for foreign visitors and assignees at multi-purpose laboratories with limited classified information. The laboratories currently meeting this criterion of limited classified materials are Argonne National Laboratory, Oak Ridge National Laboratory and Brookhaven National Laboratory.**
- **The Working Group recommends that the Counterintelligence Implementation Plan be revised to include Lawrence Berkeley National Laboratory among the laboratories exempt from the requirement for prior indices checks on visitors from all sensitive countries. The basis for this recommendation is that there is no classified research at Lawrence Berkeley National Laboratory.**

The Working Group recognizes that the Department is undertaking reform of its security programs. As with any reform, the Working Group believes the key to effectiveness is the management system. The Working Group found that the design of the recently adopted Departmental management structure lends itself to effective implementation of cross-cutting issues such as security and allows the Secretary to ensure the clear alignment of responsibility and accountability for security.

Within the context of this new structure, the Working Group supports the proposed delegation of responsibility to approve unclassified foreign visits and assignments to the Laboratory Directors, and to hold them accountable for those decisions. Further, the Working Group recommends that the new Office of Security and Emergency Operations be incorporated into the design and processes of the new management structure.

Further, the Working Group recommends that the new Field Management Council, established as part of the recent management reforms, be the vehicle used to review and approve draft policies and procedures for these multi-purpose laboratories.

The Working Group recommends that there be separate policies for foreign visitors and foreign assignees. Specifically, it suggests that prior indices checks for all assignees from sensitive countries be required, as well as for assignees from any country who will have access to sensitive areas, unless exempted by the Atomic Energy Act.

The Working Group believes existing designations, definitions for sensitive subjects and technologies and the associated security regimes are appropriate and sufficient, and that Department does not require a separate and unique approach from that utilized by other federal agencies.

APPENDIX A

The Working Group held three public meetings and one fact-finding mission to three laboratories. The first meeting held on April 29, 1999, provided a general overview of the Department's Foreign Visits and Assignments program, including a briefing by Under Secretary Ernest Moniz on the history of the program. The second meeting on May 4, 1999, included briefings by the Office of Counterintelligence on new security measures at the laboratories, briefings by representatives from six of the Department's laboratory user groups on the contributions that foreign visitors and assignees make to scientific research, and a briefing by Department of Defense officials on how they handle foreign visitors.

On May 10-11, the Working Group met with high level officials from three of Department of Energy Laboratories: Stanford Linear Accelerator Center, Lawrence Berkeley National Laboratory, and Lawrence Livermore National Laboratory. These three laboratories were chosen because they represented examples of the three types of laboratories within the complex: a single-purpose or program-dedicated laboratory, a multiprogram laboratory, and a weapons laboratory.

The Working Group was also informed by data and information which all the laboratories submitted on the number of foreign visitors and assignees at each laboratory, and examples of significant contributions that foreign visitors and assignees have made to scientific research at the laboratories. Several of the Working Group members also spoke individually with senior Departmental and laboratory officials on particular areas of interest.

During the last public meeting on May 19, the full Secretary of Energy Advisory Board reviewed and approved the general findings and recommendations of the Working Group.

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