WASHINGTON INS & OUTS

CHOICES FOR DOD, ENERGY AND COMMERCE MOSTLY FAMILIAR FACES IN R&D POLICY

After the first flush of Cabinet appointments, which were announced before President Clinton's inauguration in January, other nominations came more slowly. Six months in office, the Clinton Administration had either named or filled 59% of its 403 most senior positions—a situation that was better than the Bush White House at that time but slower than the Reagan and Carter Administrations. Many of the jobs requiring knowledge and experience in science and technology still remained open—though three of the most conspicuous, at the National Science Foundation, the National Institutes of Health and Department of Energy, were recently announced.

One reason for the delays is that filling top jobs requires a slew of investigations and reports by the White House, FBI and defense intelligence agencies to meet ethical, political and financial requirements. The Clinton Administration has compounded the process by demanding diversity in terms of ethnicity, race and gender. Lists of candidates from some departments and agencies have been sent back again and again because they lacked enough women or members of some minority groups or because too many lived in certain geographic regions, such as the Boston–Cambridge area, New York City and the Washington metropolitan area.

Among the appointments so far are some bright stars in the galaxy of Washington's R&D policy—most with a solid core in the physical sciences:

William J. Perry, codirector of Stanford University's Center for International Security and Arms Control since 1989, was confirmed by voice vote of the Senate on 5 March as deputy secretary of defense. Perry has been such a fixture in defense policy circles that some wonder if he ever left the Pentagon. As under secretary of defense for research and engineering during the Carter Administration, Perry was a champion of the then-obscure technology called "stealth," which was heralded as a way of eluding enemy radar. He was a member of the Packard Commission, which together with the Goldwater–Nichols Act became synonymous belatedly with reforms in Pentagon management and acquisition in the 1980s.

In his present position the challenge is even greater. The current "bottom-up" review, which Perry helped prepare, is widely viewed as the most fundamental restructuring of the Pentagon's operations since the Defense Department was created in its existing configuration in 1947. With the end of the cold war the premise of the military–industrial complex is being redefined. When it is completed this month, the bottom-up review will be the Clinton Administration's strategy for dealing with what is termed the "four dangers"—regional security, environmental problems, nuclear proliferation and economic stagnation. The review is expected to contain options and recommendations for dealing with defense budgets, weapons acquisition, new technological initiatives and force structure during the rest of the decade. As the "new boys" in the Pentagon see it, DOD will need to be braced for peacekeeping operations, humanitarian relief, terrorist suppression and investment in dual-use technologies.

Most members of the team Perry and Defense Secretary Les Aspin have assembled for the review, including the Joint Chiefs and several physicists, are not new to the issues. "They have spent much of their careers thinking about the problems," says Perry. One of the topics the group finds most dicey, according to Perry, is that "more than half of our defense industrial base will need to find other markets, and the department in turn will draw on commercial industry for its needs. So we are now engaged in integrating certain components with the national industrial base."

Perry received his PhD in mathematics from Pennsylvania State University in 1957. His membership on the boards of United Technologies and FMC, as well as the RAND and MITRE thinktanks, raised questions about conflict of interest during his confirmation hearing. But Perry assured the senators he would resign from the boards if confirmed. He has.

John M. Deutch, an MIT chemistry professor and former dean of science and provost at the school, assumed the newly reorganized and retitled post of undersecretary for acquisition and technology, the third ranking official at DOD after Aspin and Perry. As such Deutch has major responsibility for weapons acquisition, technology development and military conversion to a civilian economy. During his Senate confirmation hearing, Deutch emphasized DOD's responsibilities for furthering dual-purpose research and for improving military technology. Below him at the Pentagon are four deputy under secretaries who deal respectively with acquisition reform, environmental issues, ballistic missile defense technology and defense logistics. Deutch's jurisdiction extends over defense research and engineering, which includes scientific research and laboratory management.

With this assignment Deutch has served in some capacity in seven Administrations. He took a leave of absence from MIT from October 1977 to March 1980 to be director of the Office of Energy Research at the Department of Energy (1977–79), as acting assistant secretary of energy (January–June 1979) and as under secretary of DOE (August 1979 to March 1980). Besides these positions in the Carter Administration, he held advisory or consulting posts in the Kennedy, Johnson, Ford, Reagan and Bush Administrations. He was a member of the Defense Science Board from 1975 until he assumed his current post.

Deutch got his PhD in physical chemistry from MIT in 1965. A friend from their days in graduate school is Aspin, who received a PhD in economics in 1966. He was a member of the board of Science Applications International Corporation, a consulting firm specializing in national security and energy research issues and headquartered in San Diego. Perry was another SAIC board member. Like Perry, Deutch also served on the boards of RAND and MITRE, which advise DOD and other Federal agencies.

Anita Katherine Jones, a computer science professor and head of the computer science program at the University of Virginia, was sworn in on 1 June as director of defense research and engineering. She is an insider of Washington's science loop. Jones has served on the Defense Science Board, the Air Force Scientific Advi-

sory Board, the NASA Science and Applications Advisory Committee, National Research Council study panels and, along with Perry and Deutch, the boards of MITRE and SAIC.

After receiving degrees in mathematics and literature, Jones got a PhD in computer sciences from Carnegie Mellon University in 1973 and taught there for several years. She replaces **Victor H. Reis,** who was informed of the change at a meeting in the Pentagon in late February, when John Deutch surprised everyone present by blurting, "Vic, I'd like you to meet your successor, Anita Jones."

Jones is married to William A. Wulf, the AT&T Professor of Engineering and Applied Science at the University of Virginia. In the late 1980s he was assistant director of computer and information science and engineering at the National Science Foundation.

Ashton B. Carter, a Harvard University physicist and former Pentagon arms control analyst, became assistant secretary for nuclear security and counter proliferation—though not without a small contretemps during the Senate confirmation process. While awaiting confirmation, Carter occupied an office at the Pentagon and had written and signed memos relating to the dismantling of Russia's nuclear weapons. When some senators got wind of Carter's actions, they objected and threatened to prevent his confirmation. That's when Aspin and Perry went to Capitol Hill to defend Carter, and in the end the Senate confirmed Carter on 5 August, two days before the Senate began its summer recess.

Having graduated from Yale with degrees in physics and medieval history, Carter became a Rhodes Scholar and earned a PhD in theoretical physics from Oxford in 1979. He served as an analyst at Congress's Office of Technology Assessment in 1980–81, and the following year he became a research analyst in the office of the secretary of defense in the early years of the Reagan Administration. As a research fellow with the Center for International Studies at MIT, Carter was outspokenly skeptical of the Strategic Defense Initiative. In a paper he wrote for OTA in 1984 Carter was among the first to challenge the capability of nuclear-pumped x-ray lasers stationed in space to defend the US against ballistic missile attack. That year he joined Harvard's Center for Science and International Affairs, and in 1990 he was appointed associate director of the center.

In 1988 Carter was a member of a task force of the Carnegie Commission on Science, Technology and Government that produced a report calling for pragmatic "new thinking" about defense technology in the wake of momentous political and military changes occurring in the Soviet Union and Eastern Europe. The panel was headed by Perry and included Lewis Branscomb, Harold Brown, Sidney Drell, David Packard, Guy Stever and Herbert York among the physicist members. Their report urged the Defense Department to "do its share" to enlarge the base of new knowledge and renew the pool of trained scientists and engineers on which it draws to sustain its mission. It recommended that despite falling R&D budgets, the Pentagon needs to strengthen the defense technology base by increasing 6.1 (basic science) and 6.2 (applied science) activities and to streamline the grant procedures for both, emphasizing "a competition in ideas, not cost."

For months rumors had circulated that Clinton would nominate **Sheila E. Widnall,** professor of aeronautics and mathematics at MIT, to be the first woman to head one of the military services—in this case the Air Force. To many in Washington the accounts had a distinct ring of truth in that she also held the post of associate provost at MIT—a job that was familiar to another high office holder at the Pentagon, Deutch, the former MIT provost. She was confirmed for her post by the Senate on 5 August.

Widnall is a familiar figure in Washington science and engineering circles, having served as president of the American Association for the Advancement of Science and on the council of the National Academy of Engineering. She also was a member of Perry's Carnegie Commission task force on new thinking about US defense technology.

After receiving an ScD in aeronautical engineering in 1964 from MIT, she spent her entire academic career at the university. Her field of expertise is fluid dynamics and vortex turbulence. Her only previous government experience came in 1974–75 when she was director of university research at the US Department of Transportation.

In choosing Army Major General **Malcolm O'Neill** as the next director of the Ballistic Missile Defense Organization (formerly known as SDIO) on 4 August, President Clinton put forward a missile defense expert who has been relatively removed from the political disputes that have wracked the agency since its inception in 1983. Actually, O'Neill has served as acting director since May, after **Henry F. Cooper Jr,** a former Bell Labs engineer and one-time ambassador for US–USSR negotiations on nuclear and space disarmament, left as the organization's first civilian director on 20 January, the day Clinton was inaugurated.

For his part, O'Neill joined SDIO in 1985 as director of kinetic energy weapons, which would use electromagnetic projectiles to destroy enemy warheads. While the Clinton Administration has not abandoned such weapons, it has decided that kinetic energy systems would be launched from the ground and that space-based directed energy programs such as particle beams and x-ray lasers would be deemphasized or delayed.

O'Neill is awaiting promotion to lieutenant general, which was the rank that James Abrahamson held when he was SDIO's first director. The Senate will need to approve O'Neill's promotion as well as his assignment to run BMDO. O'Neill has testified this year before all four defense committees in Congress on the Pentagon's plan to refocus the program on protecting US forces in battle, the so-called theater defense.

The Administration notified the Senate Foreign Relations Committee in July that it would abide by a narrow interpretation of the 1972 Anti-Ballistic Missile Treaty, which limits the types of defensive systems that the US and former Soviet Union can develop, test and deploy. The Administration's position placed more restrictions on missile defense experiments than the broad interpretation of the treaty adopted in the Reagan era. That interpretation allowed the US greater latitude to pursue space-based defenses.

Nominated by Clinton on 10 May, **Reis** was confirmed on 6 August to be the Energy Department's assistant secretary for defense programs. In this job, Reis will be responsible for maintaining the safety and reliability of the nation's nuclear stockpile and for overseeing the reconfiguration of DOE's nuclear weapons complex into a source for lines of technology with civilian uses. Reis served as director of the Pentagon's defense research and engineering since 1991 (PHYSICS TODAY, November 1991, page 76). In that position he also was chairman of the Strategic Environmental Research and Devel-

opment Program, which involved DOD, DOE and the Environmental Protection Agency in supporting studies and prototype operations to clean up radioactive waste and debris. While at the Pentagon he was chairman of the Nuclear Weapons Council, the DOE–DOD group that makes key decisions about the nuclear arsenal.

A veteran of wider-ranging technology posts in government and industry, Reis is probably best known in Washington as the successor at the Defense Advanced Research Projects Agency to Craig Fields in 1990. Fields was fired for advocating more high-risk dual-use research programs at DARPA and favored ingenious technologies in enterprising companies. Fields's timing was off. His arguments and actions led to donnybrooks with his bosses, who objected to DARPA being run as a venture capital fund. Reis was much more cautious, earning accolades for the little agency from the Bush White House. The Clinton Administration took the word "defense" from DARPA's name and reconstituted its mission just the way Fields tried to run it.

Oddly enough, Reis had been recruited for DARPA by Fields. As a manager Reis's credentials are solid and skilled. With a PhD in mechanical engineering from Princeton in 1962, he has experience as senior staff at MIT's Lincoln Labs, vice president of Concord Research Corporation, senior vice president at SAIC and national security expert in the White House Office of Science and Technology Policy during the Reagan years. Indeed, it was ironic that George Keyworth, Reagan's science adviser, hired Reis in 1981 to analyze exotic new weapons systems. Before Keyworth took him on board at OSTP he had written a Pentagon study critical of the idea for a global ballistic missile defense, deploying flotillas of x-ray lasers, which formed the basis for Reagan's announcement of Star Wars in 1983.

On 18 May the Senate confirmed by voice vote the nomination of **Susan Fallows Tierney** as assistant secretary for domestic and international energy policy in DOE. Tierney had been secretary of environmental affairs for Massachusetts since 1991, and during that stint she served on the science advisory board and the clean air advisory board of the Environmental Protection Agencies. She will be the principal adviser to Energy Secretary Hazel R. O'Leary, the department announced, "in formulation of overall policy direction and planning. Her duties will include assessment of future program requirements in the department, as well as analyzing and evaluating energy policies and DOE program budgets."

In her first appearance before the House Energy subcommittee on health and the environment on 4 August, Tierney said a Clinton Administration task force is considering whether US companies might receive pollution credits for selling renewable energy systems or clean coal technologies to developing countries, thereby enabling those countries to reduce their emissions. The task force is preparing a plan the White House could use to meet Clinton's election campaign goal of limiting US greenhouse gases to 1990 levels by the year 2000. The concept the group is working on could result in large benefits, she told the House subcommittee. In China alone, she said, greenhouse gas emissions are projected to increase fourfold in the next 25 years. Simple improvements in energy efficiencies, Tierney stated, are likely to result in reducing China's emissions by as much as 50 million metric tons by 2025 from the amount that would otherwise spew into the atmosphere. The Energy Department has emerged as the lead agency in developing the Administration's plan for cutting back on greenhouse gas emissions. The Administration had hoped to announce its plan in mid-August at the United Nations Intergovernmental Negotiating Committee meeting in Geneva on global climate change, but Tierney observes that it is more important, "given the magnitude of the issue," that the policy should "not be rushed and that we get it right."

Prior to becoming the secretary of environmental affairs in Massachusetts, Tierney was a commissioner of the Massachusetts Department of Public Utilities and executive director of the state's Energy Facility Siting Council. Tierney received her PhD in regional planning and public policy at Cornell in 1980.

Before and after his election, Clinton declared that his Administration intended to play a more active role in technology than any previous Administration. Accordingly, his Administration has designated the Commerce Department to assist US industry in sharpening the country's technological edge. To develop the strategy for such an ambitious undertaking, the President selected **Mary Lowe Good,** senior vice president for technology at AlliedSignal Inc, as under secretary of commerce for technology. Her nomination came in the wake of the withdrawal of **John A. Rollwagen,** former CEO of Cray Research Inc, as the nominee for the number two position of deputy secretary of commerce.

In December, the newly elected President showcased Rollwagen for his experience at running the country's premier supercomputer maker. Rollwagen's experience in Washington, however, soon became an object lesson for businessmen in government. Business leaders—from Harry Sinclair of Sinclair Oil to Charles Wilson of General Motors to Caspar Weinberger of Bechtel Corp—haven't always had exemplary encounters in Washington. When Rollwagen was offered the job at Commerce it was seen as a sign of solidifying ties between experienced business hands and the incoming Clinton Administration. Enthusiastic about coordinating the new Administration's technology policy with the business community, Rollwagen quit Cray, packed up his family and belongings and moved from St. Paul, Minnesota, to Washington.

He had a rude awakening. His first weekend in Washington, spent amid White House and Cabinet officials in a Presidential retreat at Camp David, was followed by his first week at Commerce's headquarters in the Herbert Hoover Building. Rollwagen was shown to his temporary quarters, which could be entered only through someone else's office. When he set down his thoughts on creating a national telecommunications and information infrastructure, one of the Clinton–Gore campaign priorities and a proposal that attracted Rollwagen to join up, he was informed by department officials that neither he nor Commerce would be able to control the agenda, even if he could get it going, because the project would need approval by a majority of "the board of directors," the 535 members of the House and Senate.

Then on 3 May, two days before Rollwagen's confirmation hearing before the Senate commerce committee, someone leaked a report that he was under investigation by the Securities and Exchange Commission for insider stock dealings in Cray Computer Corp, a spinoff of Cray Research. Rollwagen denied any such thing, and within days the SEC cleared him of the accusations. By then, his fervor for Washington had waned. On 19 May Rollwagen withdrew as Clinton's nominee, even before the Senate could vote on his confirmation.

—IRWIN GOODWIN ■