Order Code RL31988

Polygraph Use by the Department of Energy: Issues for Congress

Updated February 14, 2007

Alfred Cumming
Specialist in Intelligence and National Security
Foreign Affairs, Defense, and Trade Division

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
14 FEB 2007	**N/A**	**-**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Polygraph Use by the Department of Energy: Issues for Congress	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Congressional Research Service, The Library of Congress, 101 Independence Ave, SE, Washington, DC 20540-7500**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release, distribution unlimited

13. SUPPLEMENTARY NOTES
The original document contains color images.

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**SAR**	**18**	

Polygraph Use by the Department of Energy: Issues for Congress

Summary

Four years after the National Academy of Sciences (NAS) questioned the accuracy of polygraph testing, and some members of Congress urged the Department of Energy (DOE) to use the polygraph as a counterintelligence rather than as a general screening tool, DOE on October 30, 2006, eliminated the use of polygraph testing for screening applicants for employment and incumbent employees without specific cause.

DOE said its new counterintelligence evaluation regulations are consistent with Intelligence Community practices and more in line with NAS's 2002 recommendations, which questioned the scientific validity of the polygraph, particularly in cases when it is used to screen applicants rather than to investigate specific events.

Under its new regulations, DOE will require a polygraph examination only if one of the following five causes is triggered: (1) if a counterintelligence evaluation of an applicant or incumbent employee reveals foreign nexus issues which warrant a polygraph exam; (2) if an incumbent employee is to be assigned within DOE to activities involving another agency and a polygraph examination is required as a condition of access to the activities by the other agency; (3) if an incumbent employee is proposed to be assigned or detailed to another agency and the receiving agency requests DOE to administer a polygraph examination as a condition of the assignment or detail; (4) if an incumbent employee is selected for a random counterintelligence evaluation; or (5) if an incumbent employee is required to take a specific-incident polygraph examination.

DOE said that instituting a "specific-cause" standard will significantly reduce the number of individuals who will undergo polygraph testing.

This report examines how DOE's new polygraph screening policy has evolved and reviews certain scientific findings with regard to the polygraph's accuracy. As part of its continuing oversight of DOE's polygraph program, the 110th Congress could address several issues, including whether DOE's new screening program is sufficiently focused on a small number of individuals occupying only the most sensitive positions; program implementation; the desirability of further research into scientific validity of the polygraph and possible alternatives to the polygraph; and whether to continue or discontinue polygraph screening.

This report will be updated as warranted.

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Polygraph Use by the Department of Energy: Issues for Congress

Introduction

Since its establishment in 1977, the Department of Energy (DOE) frequently has been criticized for its lax approach to counterintelligence (CI), particularly at its nuclear weapons laboratories.[1] After years of increasingly critical CI reviews culminated in 1998 with discovery of intelligence evidence suggesting that the People's Republic of China (PRC) had stolen secrets from DOE's national security laboratories,[2] President Clinton fundamentally restructured DOE's CI program.[3]

To tighten security, DOE was directed to develop and implement specific security measures, including the possible use of the polygraph to screen employees with access to certain classified and sensitive intelligence information.[4]

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[1] DOE has three nuclear weapons laboratories where classified nuclear weapons research is conducted: Los Alamos National Laboratory, Los Alamos, NM; Lawrence Livermore National Laboratory, Livermore, CA; and Sandia National Laboratories, Albuquerque, NM and Livermore, CA.

[2] As part of its counterintelligence review at the time, the Federal Bureau of Investigation (FBI) investigated Wen Ho Lee, a Taiwan-born U.S. scientist at the Los Alamos lab. Although the FBI never charged Lee with espionage, the Justice Department in 1999 did indict him Lee on 59 felony counts of mishandling nuclear weapons information — information which was unclassified at the time of the he was charged with mishandling. In the year 2000, Lee pleaded guilty to one count of mishandling national defense information For a comprehensive review, see CRS Report RL30143, *China, Suspected Acquisition of U.S. Nuclear Weapons Secrets*, by Shirley Kan. See also *Attorney General's Review Team on the Handling of the Los Alamos Laboratory Investigation*, May, 2000, at [http://www.fas.org/main/home.jsp].

[3] Presidential Decision Directive 61, February, 1998.

[4] A "screening" polygraph is one that is conducted in situation when there is no specific event under investigation and generally has been used, for example, to screen an applicant or an employee who will or already has access to certain classified and sensitive information. In these cases, the polygraph is not being used to investigate a specific event, and therefore the questions posed are necessarily generic (e.g., "Did you ever reveal classified information to an unauthorized person?"). By contrast, questions posed as part of a "specific-event" polygraph often are less ambiguous (e.g., "Did you see the victim on Monday?" or "Did you take the file home yesterday?") In its 2002 report, NAS concluded that polygraphs as currently used to screen applicants have serious limitations, and that the accuracy of the polygraph in distinguishing actual or potential security violators from innocent test takers is insufficient to justify reliance on its use in employee security screening in federal agencies. NAS also concluded, however, that specific-incident

(continued...)

In March 1999 DOE initiated its first-ever polygraph screening program, testing approximately 800 DOE federal and contractor employees employed in certain high-risk programs.[5] The employees were given a so-called CI-scope polygraph test, which was limited to questions concerning the individual's involvement in espionage, sabotage, terrorism, unauthorized disclosure of classified information, unauthorized foreign contacts, and deliberate damage to or malicious misuse of a U.S. Government information or defense system.

In August 1999, DOE proposed expanding its polygraph testing program to include DOE contractors who had access to its most sensitive and classified information and materials,[6] raising the number of employees subject to such testing from 800 to 3,000.

But Congress wanted more polygraph testing and in the fall of 1999 approved legislation that expanded to 13,000 the number of DOE employees subject to polygraph examination by adding to the list of high risk programs requiring such testing DOE's so-called Special Access Programs (SAPs) and Personnel Security and Assurance Programs. Congress also mandated what until then had been a DOE-discretionary polygraph program.[7]

Despite Congress's action to expand polygraph testing, DOE Secretary Bill Richardson announced in December of that year that the Department's CI interests could be satisfied by testing 800 individuals[8] and indicated a desire to seek new legislation that would ensure that DOE's polygraph implementation plan was consistent with congressional directives.

Congress responded in the year 2000 by further increasing the number of DOE employees subject to polygraph testing, designating those with access to so-called Sensitive Compartmented Intelligence to such testing.[9]

Some DOE nuclear weapons laboratory employees, however, continued to criticize polygraph testing, and in 2001 Congress directed DOE to develop a new polygraph program — one that would strike an appropriate balance NAS's concern

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[4] (...continued)
polygraph tests can discriminate lying from truth telling at rates well above chance, though well below perfection. See National Research Council of the National Academy of Sciences, *The Polygraph and Lie Detection*, 2002, pp. 1-4.

[5] United States Department of Energy News, *DOE Polygraph Implementation Plan Announced*, December 13, 1999.

[6] *Federal Register* 64, no. 242 (Dec. 17, 1999), p. 70963.

[7] P.L. 106-65, Sec. 3154.

[8] United States Department of Energy News, *DOE Polygraph Implementation Plan Announced*, Dec. 13, 1999. DOE had planned to polygraph 3,000 employees, but that number was reduced to 800 after some weapons lab employees who opposed polygraph testing criticized such testing. See Andrea Widner, "DOE Lab Employees Protest New Law Mandating Polygraph Tests," *Knight Ridder/Tribune News*, Nov. 9, 2000.

[9] P.L. 106-398, Sec. 3135.

about the accuracy of the screening polygraphs and the need to minimize unauthorized disclosure of classified and information.[10] After an initial attempt to meet the new congressional directive was criticized by some Members of Congress, DOE re-examined its approach, which led to the adoption of the new October 2006 policy.

Background

Supporters and opponents continue to debate the validity and reliability of the modern polygraph machine, which was first developed in the early 1900s. What is not subject to debate and appears to be beyond dispute is that the polygraph does not detect lies. Rather it is an instrument that charts changes in an individual's respiration, heart rate, blood pressure, and sweat gland activity in response to a series of yes or no questions.[11] Polygraph examiners determine whether a person's physiological reaction is stronger in responding to certain questions when contrasted with recorded reactions to a series of comparison or "control" questions. Stronger reactions indicate that the individual may be deceptive. It is these physiological responses which are at the heart of the ongoing debate over the validity of polygraph testing.[12] Scientists studying the polygraph also distinguish between the "polygraph test" and the "polygraph examination." The test itself first represents an attempt to capture accurate psycho physiological indicators of deception. The polygraph examination, however, includes both the test and the interrogation surrounding it, and arguably is a tool for revealing truth.[13]

The polygraph generally is used in three circumstances: event specific or exculpatory, i.e., when a crime has been committed; preemployment screening; and current employee screening. The Intelligence Community (IC) uses the polygraph both as an investigative tool and as a screening device. The Department of Defense (DOD) uses the device almost exclusively as an investigative tool, although DOD also uses it to screen employees, but only in limited cases when the employee requires exceptional clearances for highly sensitive programs.[14]

DOE has long used the polygraph as an investigative tool, but only as a screening device since 1999, when it began to screen employees requiring access to high-risk programs. The Department adopted screening polygraphs after intelligence

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[10] P.L. 107-107, Sec. 3152.

[11] A polygraph instrument will collect physiological data from at least three systems in the human body. Convoluted rubber tubes that are placed over the examinee's chest and abdominal areas will record respiratory activity. Two small metal plates, attached to the fingers, will record sweat gland activity, and a blood pressure cuff, or similar device, will record cardiovascular activity.

[12] National Research Council of the National Academy of Sciences, *The Polygraph and Lie Detection*, 2002, p. 13.

[13] Ibid., p. 21.

[14] Commission on Science and Security, *Science and Security in the 21st Century, A Report to the Secretary of Energy on the Department of Energy Laboratories*, Apr., 2002, p. 54.

information surfaced that the PRC may have stolen secrets from DOE's weapons labs and following President Clinton issuance of PDD 61, which directed DOE to consider establishing a polygraph screening program as one component of a comprehensive CI program. The program was also to include background checks, periodic reinvestigations, monitoring of financial records, restrictions on publishing materials, and, for some employees, mandatory drug testing and medical assessments.[15]

DOE cited three reasons for adopting polygraph screening. First, it asserted that such testing could deter unauthorized disclosures of classified information as well as provide early warning of unauthorized disclosure of classified or sensitive information, allowing DOE to more promptly mitigate any damage to the national security. Second, DOE stated that polygraph examinations would speed the granting of interim personnel security clearances. And, third, DOE argued that employees with unresolved CI issues could resolve those issues more quickly by being able to exercise the option to be polygraphed. Throughout the ongoing debate on polygraph testing, DOE has taken the position that it will take not take an adverse personnel action solely on the basis of a polygraph result indicating deception.[16]

Some See Polygraph's Utility But Many DOE Scientists Are Skeptical

Many DOE laboratory personnel have a "very negative" attitude towards the polygraph, according to the report of the "Redmond Panel," a panel of experts which reviewed DOE CI capabilities at DOE's national security laboratories on behalf of the House Permanent Select Committee on Intelligence.[17] The attitude toward polygraphs at the laboratories, according to the Panel, runs the gamut from cautiously and rationally negative, to emotionally and irrationally negative.[18] The Panel noted in its findings that never before have so many cleared employees of a government organization had to have their clearances threatened by the institution of the polygraph.[19]

The Panel also noted that scientists do, in fact, represent a particular problem with regard to the administration of polygraphs. "They are most comfortable when dealing with techniques that are scientifically precise and reliable," the Panel stated. "The polygraph, useful as it is as one of several tools in a CI regimen, does not meet this standard. Accordingly, many scientists who have had no experience with it are skeptical of its utility."[20] Redmond and his colleagues also noted, however, that "...polygraphs, while not definitive in their results, are of significant utility in a

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[15] *Federal Register* 64, no. 242 (Dec. 17, 1999), p. 70962.

[16] *Federal Register* (Volume 71, Number 189), Sept. 29, 2006, pp. 57389.

[17] U.S. Congress, House Permanent Select Committee on Intelligence, *Report of the Redmond Panel*, June 21, 2000, pp. 7-8.

[18] Ibid., p. 7.

[19] Ibid., p. 7.

[20] Ibid., p. 8.

broader comprehensive CI program. The polygraph is an essential element of the CI program and it will not work until it is accepted by those who are subject to it."[21]

The National Academy of Sciences (NAS) agreed that the polygraph has a degree of utility, concluding that such testing has some utility in "deterring security violations, increasing the frequency of admissions of such violations, deterring employment applications from potentially poor security risks, and increasing public confidence in national security organizations....Such utility derives from beliefs about the procedure's validity, which are distinct from actual validity or accuracy."[22] Still, NAS questioned the polygraph's scientific validity and was generally critical of its use, particularly for screening purposes.

Some critics, however, question not only the polygraph's validity but also its utility. The Society of Professional Scientists and Engineers, an association of current and retired scientists at Lawrence Livermore National Laboratory, is one such critic. "Their unreliability renders polygraphs incapable of catching spies and can lead to false accusations of innocent workers who may find themselves defenseless against the machine's oscillations," according to the Society.[23] Critics assert further that polygraph testing has failed to uncover such prominent spies as Aldrich Ames and can be rendered ineffective by countermeasures.

Dearth of Scientific Evidence Underlying the Polygraph

As distinct from the polygraph's utility, supporters and critics alike agree that scientific evidence supporting the accuracy of polygraph screening is extremely limited. NAS, for example, reported that it could identify only one flawed field study containing relevant evidence with regard to the accuracy of preemployment polygraph screening.[24] The American Polygraph Association (APA), the country's largest association of polygraphers, acknowledges that such evidence is scant, but blames limited research funding.[25] NAS apparently agrees, noting that the lack of serious investment in such research is "striking," given the government's heavy reliance on the polygraph, especially for screening for espionage and sabotage. [26]

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[21] Ibid., p. 8.

[22] The National Research Council of the National Academy of Sciences, *The Polygraph and Lie Detection*, 2002, p. 6.

[23] Society of Professional Scientists and Engineers, *SPSE Speaks Out on Polygraphs*, Aug. 13, 1999.

[24] The National Research Council of the National Academy of Sciences, *The Polygraph and Lie Detection*, 2002, p. 3.

[25] American Polygraph Association, *Statement of the American Polygraph Association Pertaining to the National Academy of Sciences (NAS) Report on the Use of the Polygraph*, undated.

[26] The National Research Council of the National Academy of Sciences, *The Polygraph and* (continued...)

What the Available Evidence Does Show

In generally criticizing the use of the polygraph, particularly for screening purposes, NAS concluded that the polygraph yields an unacceptable choice for DOE employee security screening between too many loyal employees falsely judged deceptive and too many major security threats left undetected. According to NAS, the polygraph's accuracy in distinguishing actual or potential security violators from innocent test takers is insufficient to justify reliance on its use in employee security screening in federal agencies.[27]

NAS acknowledged that polygraph screening may have some utility for achieving such objectives as deterring security violations, increasing the frequency of admissions of such violations, deterring employment applications from potentially poor security risks, and increasing public confidence in national security organizations. But it noted that such utility derives from beliefs about the validity of the procedure, and are distinct from "actual validity or accuracy."[28]

NAS also found that the polygraph simply is not sufficiently accurate to merit its use for screening of the type of population found at DOE. According to NAS, the proportion of spies, terrorists and other major national security threats among the employees subject to polygraph testing in DOE labs presumably is very low, and polygraphs therefore should not be counted on for detection when screening populations with low rates of the target transgressions. "Screening in populations with very low rates of the target transgressions (e.g., less than 1 in 1,000) requires diagnostics of extremely high accuracy, well beyond what can be expected from polygraph testing."[29]

NAS also reported that countermeasures pose a potentially serious threat to the performance of polygraph testing because the physiological indicators measured by the polygraph can be altered by conscious efforts through cognitive or physical means. "There is enough empirical evidence to justify concern that successful countermeasures may be learnable," NAS noted in its report.[30]

NAS's findings essentially track the results of a similar research review conducted by the Congressional Office of Technical Assessment (OTA) in 1983. OTA concluded that the evidence establishing the polygraph's scientific security when used for screening was insufficient. OTA also noted the impossibility of establishing the overall validity of the polygraph, citing two reasons. First, the polygraph examination encompasses a process that is far more complex than the instrument itself, according to OTA. The types of individuals tested, the examiner's

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[26] (...continued)
Lie Detection, 2002, p. 8.

[27] Ibid., p. 6.

[28] Ibid., p. 8.

[29] Ibid., p. 5.

[30] Ibid., p. 216.

training, the purpose of the test, and the types of questions asked, among other factors, can differ substantially, one test from the next, OTA asserted. Second, OTA reported that research on polygraph validity varies widely in terms of results and the quality of the research design and methodology. "... [C]onclusions about scientific validity can be made only in the context of specific applications and even then must be tempered by the limitations of available research evidence," OTA stated.[31]

Supporters of polygraph testing, such as the APA, counter skeptics by citing 80 different research projects conducted since 1980 showing polygraph accuracy ranges of 80-98 percent.[32] While conceding that most of the those research projects have studied event-specific polygraph testing rather than pre-employment or employment screening, supporters argue that "real world conditions are difficult if not impossible to replicate in a mock crime or laboratory environment for the purpose of assessing effectiveness."[33]

They further contend that the same physiological measures are recorded, and the same basic psychological principles may apply, in both event specific and pre-employment screening polygraph examinations. Thus, they argue, there is no reason to believe that there is a substantial decrease in the accuracy rate for the preemployment circumstance as compared to the event-specific polygraph. The few studies that have been conducted on preemployment testing support this contention, according to these supporters .[34]

U.S. intelligence agencies also remain convinced that the polygraph is a useful screening tool. The CIA, for example, cited classified research to support its use of polygraph testing but declined to share its research findings with OTA.[35]

In its 1983 report, OTA asserted that the CIA and the National Security Agency (NSA) employ the polygraph as an interrogation technique with the goal of encouraging admissions rather than as a method to determine deception or truthfulness, per se. OTA further noted that NSA security adjudicators are more interested in the pre-test and post-test responses than in any other examination results produced by the polygraph. OTA concluded that the Intelligence Community's research measured the polygraph's utility, rather than its scientific validity.

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[31] Office of Technology Assessment, *Scientific Validity of Polygraph Testing,* Nov. 1983, p. 4.

[32] American Polygraph Association, *Polygraph Issues and Answers,* undated.

[33] American Polygraph Association, *Statement of the American Polygraph Association Pertaining to the National Academy of Sciences (NAS) Report on the Use of the Polygraph,* undated.

[34] American Polygraph Association, *Polygraph Issues and Answers,* undated.

[35] Office of Technology Assessment, *Scientific Validity of Polygraph Testing,* Nov. 1983, p. 100.

Congress Instructs DOE To Develop New Polygraph Program

The FY2002 National Defense Authorization Act[36] directed DOE to develop a new polygraph program, taking into account NAS's polygraph findings questioning the accuracy of screening polygraphs. At the same time, the Congress instructed that the purpose of any such new program should be to minimize the potential for release or disclosure of classified data, materials, or information.

To satisfy the congressional directive, DOE on April 14, 2003, published a notice of proposed rule-making "to begin a proceeding to consider whether to retain or modify [DOE's] current Polygraph Examination Regulations."[37] While acknowledging NAS's recommendation that the polygraph not be used to screen employees, and Congress's directive that NAS's views on the issue be taken into account, DOE Secretary Abraham[38] said the Energy Department would retain polygraph screening as one of several CI tools. He said that DOE's polygraph program was "consistent with the statutory purpose of minimizing the risk of disclosure of classified data,"[39] and pointed out that DOE uses the polygraph only in conjunction with other information and only as a trigger for a detailed follow-up investigation, not as a basis for personnel action. This, according to Abraham, was compatible with NAS's conclusion that if polygraph screening is to be used at all, it should be used in this fashion.[40]

Critics of the Secretary's decision, including Senator Jeff Bingaman, said relying on a technique as inaccurate as the polygraph could produce a false sense of confidence. That overconfidence, Bingaman suggested, "can be the real danger to national security." Applying polygraphs to employee screening could lead to either too many loyal employees who will be judged deceptive, or too many major security threats undetected, Bingaman noted.[41] Senator Pete Domenici agreed, saying, "I continue to believe that the system is too much an affront[,] especially since the polygraph program was so thoroughly criticized by the National Academy of Sciences. I hope the department will rethink this situation."[42]

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[36] P.L. 107-107, Section 3152.

[37] *Federal Register* 68, no. 71, p. 17886.

[38] Spencer Abraham was sworn in as DOE's 10th secretary on Jan. 20, 2001. He served in that position until being replaced by Dr. Samuel Bodman, assumed that office on February 1, 2005.

[39] United States Department of Energy News, *DOE Issues Notice of Proposed Rulemaking on Polygraph Use*, Apr. 14, 2003.

[40] Ibid.

[41] Press Statement of Sen. Bingaman, Apr. 14, 2003. Sen. Bingaman is the Ranking Member of the Senate Committee on Energy and Natural Resources, which has legislative jurisdiction over DOE.

[42] News release of Sen. Domenici, *Domenici: DOE Worries Shouldn't Mean Continuation of Flawed Polygraph Policy,* Apr. 15, 2003. Sen. Dominici is the Chairman of the Senate

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In issuing a Supplemental Notice of Proposed Rule in lieu of DOE's April 2003 preliminary proposal, DOE officials apparently did rethink their approach. DOE Deputy Secretary McSlarrow[43] foreshadowed the Department's new approach, testifying before Congress on September 4, 2003, that he had recommended to Secretary Abraham that DOE issue a new regulation that would sharply curtail polygraph screening.[44] In testimony before the Senate Energy and Natural Resources Committee, McSlarrow said DOE should retain mandatory polygraph screening only for individuals with regular access to the most sensitive information. The result, according to McSlarrow, would be to reduce "the number of individuals affected from well in excess of potentially 20,000 ... to approximately 4,500..."[45] In recommending a more focused program, he cited NAS's findings that polygraph accuracy is insufficient to justify reliance on its use in screening individuals. But he also said that DOE's use of the polygraph as a screening device conformed with NAS's recommendation that such screening should be used only as a trigger for further testing and investigation and only in conjunction with the collection of other information about the individual.[46]

In advocating random polygraph testing, McSlarrow cited the NAS's finding that "polygraph screening may be useful for achieving such objectives as deterring security violations, increasing the frequency of admissions of such violations, [and] deterring employment applications from potentially poor security risks," and that predictable polygraph testing probably has less deterrent value than random testing."[47]

Senator Domenici commended McSlarrow's testimony and DOE's apparent willingness to radically revise its polygraph test policy. "I have been appalled by DOE's continued massive use of polygraph tests in the wake of a national study condemning the reliability of these tests ... I commend DOE for announcing plans to substantially reduce the number of people subject to polygraphs and to ensure that no negative actions are taken based on a single polygraph result," he said."[48]

Senator Bingaman warned, however, that although DOE's proposed new polygraph policy as outlined by McSlarrow was a step in the right direction, he

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[42] (...continued)
Committee on Energy and Natural Resources, which has legislative jurisdiction over DOE.

[43] Kyle E. McSlarrow served as DOE Deputy Secretary, 2003-2005.

[44] Statement of Kyle E. McSlarrow before the Senate Committee on Energy and Natural Resources, *Department of Energy Polygraph Policy*, September 4, 2003.

[45] Ibid.

[46] Ibid.

[47] Statement of Kyle E. McSlarrow before the Senate Committee on Energy and Natural Resources, *Department of Energy Polygraph Policy*, September 4, 2003.

[48] Press statement of Sen. Domenici, *Domenici Commends DOE for Sharply Reducing Number of Employees Subject to Polygraph Testing*, September 4, 2003.

continued to have serious reservations about DOE's polygraph use because the scientific evidence does not support the use of polygraphs as a screening tool.[49]

DOE's January 7, 2005, Proposed Rule

DOE's January 7, 2005, supplemental proposed rule[50] mirrored McSlarrow's earlier recommendations by retaining mandatory polygraph screening already in place for those occupying:

- all counterintelligence positions;
- all positions in the Headquarters Office of Intelligence and at the Field Intelligence Elements; and
- all positions in the DOE Special Access Programs (and non-DOE Special Access Programs if a requirement of the program sponsor).

Individuals with continuing routine access to all DOE-originated Top Secret information, including Top Secret Restricted Data and Top Secret National Security Information, also would be polygraph screened. This group — probably less than 1,000 complex-wide — would not include everyone with a "Q"[51] clearance, or a Top Secret clearance, nor would it include all DOE weapons scientists. Rather, it would cover only those whose positions require continuing, routine access to Top Secret Restricted Data or other DOE-originated Top Secret information.[52]

Under the proposal, certain managers, with input from the Office of Counterintelligence and subject to approval of either the Secretary or the Administrator of the National Nuclear Security Administration, would be authorized to identify additional individuals within their offices or programs who would be subject to polygraph screening. This category of individual, however, would be limited to those having regular access to information or other materials presenting the highest risk.[53]

The supplemental proposed rule also would institute a random screening program affecting those positions whose level and frequency of access, while not requiring mandatory screening, nevertheless would warrant some additional measure

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[49] Press statement of Sen. Bingaman, *Bingaman Raises Concerns About DOE's New Polygraph Policy*, September 4, 2003.

[50] See *Federal Register*, January 7, 2005 (Volume 70, Number 5), p. 1387.

[51] A "Q" clearance provides clearance to sensitive compartmented intelligence pertaining to nuclear weapons.

[52] See *Federal Register*, January 7, 2005 (Volume 70, Number 5), p. 1387.

[53] Ibid.

of deterrence against damaging disclosures.[54] McSlarrow estimated that 6,000 individuals would be eligible for random polygraphing, but that only a minimum percentage of that number would be subject to a polygraph during any single year. Those subject to a random polygraph would include:

- all positions in the Offices of Security, Emergency Operations, and Independent Oversight and Performance Assurance that are not designated for the mandatory screening program;
- positions with routine access to Sigma 14 and 15 weapons data (Sigma 14 and Sigma 15 refer respectively to vulnerability information and use control information in connection with the nuclear weapons program); and
- system administrators for classified cyber systems.

The proposed rule permitted "specific incident" polygraph examinations in those cases when specific facts or circumstances raised counterintelligence concerns with a "defined foreign nexus."

Under the proposed rule, DOE would not take any adverse personnel action nor deny an individual access to certain information or programs solely because of certain polygraph examination results.

DOE's 2006 Final Rule

On October 31, 2006, DOE issued its final rule establishing new CI evaluation regulations. The new regulations largely mirror the provisions of the January 7, 2005 supplemental proposed rule, with one principal exception. DOE's final rule stipulates that DOE must have a specific cause to administer a polygraph; the January 7, 2005 proposed rule contain no such conditionality. The final rule eliminates polygraph testing for general screening of applicants for employment and for incumbent employees *without specific cause* [emphasis added], a policy which DOE asserts is consistent with Intelligence Community practices and the NAS report.[55]

Under the its new CI regulations, DOE will require a polygraph examination only if one of the following five causes is triggered: (1) if a counterintelligence evaluation of an applicant or incumbent employee reveals foreign nexus issues which warrant; (2) if an incumbent employee is to be assigned within DOE to activities involving another agency and a polygraph examination is required as a condition of access to the activities by the other agency; (3) if an incumbent employee is proposed to be assigned or detailed to another agency and the receiving agency requests DOE

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[54] Ibid.

[55] National Research Council of the National Academy of Sciences, *The Polygraph and Lie Detection*, 2002, p. 6. NAS concluded in its report that, "... [the polygraph's] accuracy in distinguishing actual or potential security violators from innocent test takers is insufficient to justify reliance on its use in employee security screening in federal agencies...."

to administer a polygraph examination as a condition of the assignment or detail; (4) if an incumbent employee is selected for a random counterintelligence evaluation; (5) or, if, an incumbent employee is required to take a specific-incident polygraph examination.

Instituting "for-cause" based polygraph examinations will "significantly reduce" the number of individuals who will undergo a polygraph examination, according to DOE. Although the new rule does not provide an estimate of the number of individuals who will be subject to such testing, it is estimated that less than 2,300 individuals will be tested annually.

Applicants for certain high-risk positions are designated as "covered persons"[56] under the new rule and will be subject to a CI investigation. Incumbents of such high-risk positions will be re-evaluated every five years. In both cases, the individual may be polygraph-tested if any one of the five "for-cause" situations applies. If a polygraph examination discloses "unresolved foreign nexus issues," DOE may further evaluate financial, credit, travel, and other relevant information to resolve the issues.

DOE's final rule also included a new provision requiring that recordings — both video and audio — be made of each polygraph examination. Although DOE is not required to establish a policy of releasing polygraph reports or videotapes of such examinations, individuals will be entitled to file Freedom of Information requests to obtain such material.

Aside from these modifications, the final rule included earlier proposed provisions permitting random CI evaluations, including polygraph screening; specific incident polygraph examinations; and the requirement that no adverse decision on access to classified or sensitive information will be based only upon polygraph results.

Issues for Congress

A More Focused Polygraph

One issue for Congress is whether the Energy Department's polygraph screening program should focus on a smaller number of individuals occupying only the most sensitive positions. The DOE's new rule attempts to address this issue by

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[56] The rule defines "covered persons" as those who occupy high-risk positions and includes those: (1) employed by an intelligence or counterintelligence program office (or with programmatic reporting responsibility to an intelligence or counterintelligence program office) because of access to classified intelligence information, or sources, or methods; (2) with access to Sensitive Compartmented Information; (3) with access to information that is protected within a non-intelligence Special Access Program (SAP) designated by the Secretary; (4) with regular and routine access to Top Secret Restricted Data; (5) with regular and routine access to Top Secret National Security Information; and (6) designated, with approval of the Secretary, on the basis of risk.

establishing a for-cause polygraph examination policy. U.S. Senator Pete Domenici said that the Department's rule "....is in the spirit of the National Academy of Sciences [sic] recommendation, which is good. The test will be how the rule is implemented, but I believe DOE is right to move toward the use of polygraphs as a counter-intelligence tool rather than a widespread policy tool for screening employees. I believe the new rule meets the new course Senate Bingaman and I wanted in a new polygraph policy for the labs."[57]

Additional Research

Critics and supporters alike agree that further research into the scientific basis for psycho physiological detection of deception by any technique is warranted.[58] The NAS report suggested that if the government continues to rely heavily on the polygraph, research should be conducted that might result in the development of a firmer scientific foundation for the polygraph. NAS cautioned, however, that the inherent ambiguity of the polygraph's physiological measurements suggests that investments in improving polygraph technique and interpretation will bring only modest improvements in accuracy.[59] Rather than further research into the polygraph, NAS recommended that more broadly-based research be undertaken with regard to detecting and deterring security threats.[60] NAS suggested that alternative techniques, such as measurements from brain activity and other physiological indicators, facial expressions, voice quality, and other aspects of demeanor show some promise, it cautioned that "none [of these techniques] has yet been shown to outperform the polygraph. None shows any promise of supplanting the polygraph for screening purposes in the near term."[61] NAS recommended that any such research program should be largely administered by "an organization or organizations with no operational responsibility for detecting deception and no institutional commitment to using or training practitioners of a particular technique."[62]

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[57] See "Domenici Statement on New DOE Polygraph Rule," Oct. 10, 2006. Sen. Domenici authored, and Sen. Jeff Bingaman cosponsored the legislation requiring that a new DOE polygraph program be instituted based on the National Academy Sciences Polygraph Review. The provision was included in the FY2002 Defense Authorization Bill.

[58] It perhaps is interesting to note that the Department of Defense, employing the term — "Credibility Assessment" — has adopted as part of a revised polygraph program non-polygraph techniques for detecting deception. According to the Pentagon, the term credibility assessment refers to "the multi-disciplinary field of existing as well as potential techniques and procedures to assess truthfulness that relies on physiological reactions and behavioral measures to test the agreement between an individual's memories and statements." See Department of Defense Directive Number 5210.48, Jan. 25, 2007.

[59] See the National Research Council of the National Academy of Sciences, *The Polygraph and Lie Detection*, 2002, p. 213.

[60] Ibid., p. 9.

[61] See the National Research Council of the National Academy of Sciences, *The Polygraph and Lie Detection*, 2002, p. 8.

[62] Ibid., p. 229.

NAS high-lighted two areas it believed to be worthy of additional research — computerized analysis of polygraph records, which could improve the accuracy of test results by using more information from polygraph records than is used in traditional scoring methods; and combining polygraph information with information from other screening techniques. NAS also concluded that more research of countermeasures is needed, but suggested that policy makers carefully weigh the danger of public knowledge of countermeasures against the benefits of a robust public research program.[63]

While claiming that the polygraph provides satisfactory detection and deterrence, polygraph supporters still favor additional research on grounds that such efforts could lead to improvements in the polygraph's validity and reliability.[64] Supporters caution, however, that the principle obstacle to assessing the polygraph's validity and reliability remains the difficulty in replicating real world conditions in a mock crime or laboratory environment. They further assert that the lack of resources also has hindered any such research efforts.

Congress addressed NAS's recommendation for additional research in 2003 when it included funds for polygraph research in the FY2004 Intelligence Authorization Act.[65] The act provided National Science Foundation and the Office of Science and Technology Policy $500,000 to study alternatives to the polygraph.

Discard Use Of Polygraph For Screening

Another issue for Congress is whether to discontinue polygraph screening altogether. Critics characterize polygraph screening as misguided and suggest that it be replaced by a more thorough examination of financial records and travel, and more frequent reinvestigation by traditional means. They further argue that the screening polygraph gives authorities a dangerously false sense of over confidence that they have adequately screened for spies.[66] Such misplaced confidence could lead authorities to relax efforts to obtain CI information through other channels, such as periodic security re-investigations and a close monitoring of security violations in certain government facilities.[67] Finally, critics caution that notwithstanding the accuracy of polygraphs, they can be defeated through certain countermeasures.[68]

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[63] Ibid., p. 231.

[64] American Polygraph Association, *Statement of the American Polygraph Association Pertaining to the National Academy of Sciences (NAS) Report on the Use of the Polygraph,* undated.

[65] P.L. 108-177, Sec. 375.

[66] See comments by the Society of Professional Scientists and Engineers to proposed polygraph examination regulations, 10 CFR Pat, 709, Federal Register 68, p. 17886, Apr. 14, 2003.

[67] National Research Council of the National Academy of Sciences, *The Polygraph and Lie Detection*, 2002, p. 7

[68] Ibid., p. 5.

Supporters counter that the polygraph is still the best tool available to detect deception, and that it remains an important counterintelligence tool. Some supporters distinguish between the polygraph's utility and its scientific validity and reliability. While its accuracy may be questionable, the polygraph has significant utility when deployed as part of a comprehensive CI program, according to supporters, who emphasize that the polygraph is just one tool among several used in any such comprehensive program.[69] Finally, some government organizations have claimed that certain classified research supports their confidence in the polygraph.[70]

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[69] U.S. Congress, House Permanent Select Committee on Intelligence, *Report of the Redmond Panel*, June 21, 2000, pp. 7-8.

[70] Office of Technology Assessment, *Scientific Validity of Polygraph Testing*, Nov. 1983, p. 100. OTA said the CIA did not permit it to review the Agency's classified research on the subject.