The Secretary of Energy
Washington, DC 20585
July 15, 1997

MEMORANDUM FOR ALL DEPARTMENTAL ELEMENTS

FROM: Federico Peña /s/

SUBJECT: Department of Energy Notice (DOE N) 440.1, "Interim Chronic Beryllium Disease Prevention Program"

The Notice, "Interim Chronic Beryllium Disease Prevention Program," is attached for your action. The Notice establishes Departmental expectations for addressing chronic beryllium disease throughout the Department until a Departmental rule on beryllium is promulgated. The Chronic Beryllium Disease Prevention Program is designed to minimize the exposure and the potential for occupational exposure to beryllium, reduce the number of workers exposed, and establish medical surveillance protocols to ensure early detection of chronic beryllium disease.

The Notice will be published for immediate implementation. Contractors, as directed by their contracting officer, will be required to submit a Chronic Beryllium Disease Prevention Program to the DOE for approval 90 days after the effective date of this Notice.

Should you have any question concerning the Notice, please call C. Rick Jones at 301-903-6061.

Attachment

U.S. Department of Energy
Washington, D.C.

NOTICE

DOE N 440.1

7-15-97

SUBJECT: INTERIM CHRONIC BERYLLIUM DISEASE PREVENTION PROGRAM

1. PURPOSE. To establish a chronic beryllium disease prevention program (CBDPP) that enhances, supplements and is integrated into the worker protection program requirements of Department of Energy (DOE) Order 440.1, "Worker Protection Management for DOE Federal and Contractor Employees." This program is designed to reduce the number of current workers exposed, minimize the levels of beryllium exposure and the potential for exposure to beryllium, and establish medical surveillance protocols to ensure early detection of disease.

2. APPLICABILITY.

   a. DOE Elements. Except for the exclusions in paragraph 2c below, this Notice applies to all DOE Elements with operations involving exposure and the potential for exposure to insoluble forms of beryllium at DOE-owned or-leased facilities.

      (1) For the purpose of this Notice, beryllium means elemental beryllium and any insoluble beryllium compound or alloy containing 0.15 percent beryllium or greater that may be released as an airborne particulate.

      (2) Beryllium articles are not covered by this Notice. A beryllium article is a manufactured item formed to a specific shape or design during manufacture that has end-use functions dependent in whole or in part on its shape or design during end use, and that does not release or otherwise result in exposure to airborne concentrations of beryllium under normal conditions of use.

   b. Contractors. Except for the exclusions in paragraph 2c below, the Contractor Requirements Document (CRD), Attachment 2, sets forth requirements that are to be applied to contractors awarded contracts, including integrating contractors, (and subcontractors thereunder) for the operation and management of DOE-owned or -leased facilities where there is exposure and the potential for exposure to beryllium. Contractor compliance with the CRD will be required to the extent set forth in a contract.

Distribution:
All Departmental Elements

Initiated By:
Office of the Secretary

c. Exclusions. This Notice does not apply to:

(1) DOE laboratory operations involving beryllium that are subject to the requirements of 29 CFR 1910.1450, "Occupational Exposure to Hazardous Chemicals in Laboratories."

(2) The Naval Nuclear Propulsion Program, which is covered under Executive Order 12344, Public Law 98-525 (42 United States Code (U.S.C.) 7158, Note), is responsible for establishing standards to ensure adequate protection for workers, the public, and the environment for facilities and activities under Naval Nuclear Propulsion Program cognizance.

3. CHRONIC BERYLLIUM DISEASE PREVENTION PROGRAM OBJECTIVES. The objectives for DOE's CBDPP are directed toward achieving the goal of preventing future cases of chronic beryllium disease (CBD) resulting from DOE activities. DOE's objectives are to:

a. Conduct comprehensive inventory and hazard assessments for beryllium by qualified professional industrial hygienists to ensure that current workers not involved with beryllium activities or processes and the public are not exposed to beryllium.

b. Minimize the number of current workers and their exposure when beryllium is a potential or known hazard, by providing appropriate levels of controls and exposure reduction and minimization measures and goals for beryllium work activities where potential risk of exposure to beryllium warrants.

c. Conduct medical surveillance on beryllium-exposed current workers to ensure the early detection of disease and beryllium sensitization prior to diagnosis of CBD.

d. Collect and analyze performance feedback data in the form of exposure monitoring and medical surveillance results to demonstrate the effectiveness of the CBDPP and to enhance the program.

4. REQUIREMENTS. DOE Elements shall:

a. Implement a CBDPP that augments and is integrated into the safety and health program requirements specified in DOE Order 440.1 (5483.1B, 5480.4, 5480.8A, and 5480.10 for operations contractually not covered by 440.1), for the protection of current workers from the hazards of occupational exposures to beryllium.

In addition, integrate the CBDPP into those operations or activities covered under 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response," and into the sites Integrated Safety Management Program.

b. Include in the CBDPP written plans, schedules, and other measures for achieving the objectives and requirements of this Notice. The program shall address, at a minimum, the following elements: baseline inventory and sampling, hazard assessment, medical surveillance, exposure monitoring, training, exposure reduction and minimization, recordkeeping, and performance feedback.

c. Comply with Attachment 1, which lists the program performance elements necessary for the development of CBDPPs.

d. Ensure all aspects of the CBDPP are managed and implemented by professionally and technically qualified industrial hygienists and medical personnel.

5. RESPONSIBILITIES. Heads of Departmental Elements shall:

a. Require initiators of procurement requests to identify in those requests whether the CRD for this Notice applies to contractors (and subcontractors thereunder), and also identify any special instructions for the application of the CRD.

b. Within 90 days after the effective date of this Notice, initiate negotiations for application of the CRD for this Notice to existing contracts (and subcontracts thereunder).

c. Require that contractors submit CBDPPs to their DOE Field Organizations for review and have approved CBDPPs within 6 months after the effective date of this Notice.

d. FOR DEFENSE PROGRAMS CONTRACTORS ONLY: Submit CBDPPs to the Assistant Secretary for Defense Programs (DP-1) for review and have approved CBDPPs within 6 months after the effective date of this Notice.

e. Review and approve all contractor CBDPPs.

f. Modify the requirements of this Notice for a contractor or subcontractor when necessary to accommodate the obligations of a contractor whose employees are represented for collective bargaining purposes by a labor organization consistent with the requirements of the National Labor Relations Act.

6. CONTACTS.

a. Consult the Implementation Guide associated with this Notice when establishing a CBDPP.

b. For technical interpretations related to CBDPPs, consult the DOE Technical Information Services database, or call the DOE Response Line at (800) 292-8061.

FEDERICO F. PEÑA
Secretary of Energy

ATTACHMENT 1

PERFORMANCE ELEMENTS FOR DEVELOPMENT OF A CHRONIC BERYLLIUM DISEASE PREVENTION PROGRAM

CHRONIC BERYLLIUM DISEASE PREVENTION PROGRAM. DOE Elements shall implement the following that augments and is integrated into the worker protection program requirements specified in DOE Order 440.1, paragraphs 4.a. through m. and Attachment 1, paragraph 5.

1. Baseline Inventory and Sampling. Develop a baseline inventory of beryllium locations and operations; identify exposed and potentially exposed current workers by location; and conduct sampling.

    a. Conduct a records review and employee interviews.

    b. Document the presence and locations of beryllium on site.

    c. Conduct, where appropriate, the monitoring required by paragraphs 3.b. through d. below.

2. Hazard Assessment.

    a. Conduct a beryllium hazard assessment and determine whether in-depth analysis is warranted.

    b. Conduct in-depth analysis, where appropriate, to ascertain the nature of the exposure risk to beryllium.

    c. Include in the beryllium hazard assessment an analysis of existing conditions, exposure data, medical surveillance trends, and the exposure potential of planned activities.

3. Exposure Monitoring.

    a. Identify the operations and areas in which workers must be monitored.

    b. Conduct personal breathing zone sampling for all workers exposed and potentially exposed to beryllium, or provide the rationale for monitoring a limited subset of workers.

c. Conduct area sampling where appropriate to determine operational control.

d. Conduct surface sampling to determine housekeeping conditions and to identify contamination that has the potential to become airborne.

e. Establish the required frequency of monitoring by using a risk-based (tailored) approach.

f. Require additional monitoring when warranted due to changes in operations or procedures, or as necessary to ensure that exposure reduction and minimization goals are met.

4. Exposure Reduction and Minimization. Manage and control exposures to beryllium by: reducing airborne levels of beryllium as-low-as-practical, minimizing the number of current workers exposed and potentially exposed to beryllium, minimizing the number of opportunities to be exposed, and setting reasonable exposure reduction and minimization goals using a risk-based (tailored) approach. Elements of reduction and minimization strategies include:

a. Developing a documented program that includes exposure reduction and minimization goals using a risk-based (tailored) approach, a plan for meeting goals, measures that will be used to assess status of attaining goals, and the rationale for determining reduced and minimized exposures.

b. Using administrative action levels that trigger actions to reduce or minimize worker exposure and the potential for exposures.

c. Establishing contamination control to preclude exposures to the extent practical.

d. Implementing work control strategies to reduce exposures to as-low-as-practical using the established hierarchy of industrial hygiene controls (i.e., engineering and administrative controls, and personal protective equipment) and to reduce the potential for worker exposure.

e. Documenting the rationale used for determining reduced and minimized exposures.

5. Medical Surveillance. Offer to enroll in a medical surveillance program all workers at risk for chronic beryllium disease (CBD) due to exposure or potential exposure to beryllium.

a. Maintain an updated roster of workers at risk for CBD.

b. Conduct pulmonary medical histories and lung function tests as part of the

preplacement examination for workers to be assigned to beryllium areas. If the occupational medicine physician concludes that the medical history and the lung function test results warrant a chest x-ray, it must be offered to the worker.

c. Provide on a voluntary basis, beryllium-specific peripheral blood lymphocyte proliferation testing, or other available preferred beryllium-specific tests considered appropriate by an occupational medicine physician, to screen for beryllium sensitization and provide early detection of CBD. Physicians must notify workers of the procedures and associated risks of the tests.

d. Workers' occupational histories and clinical stages of the disease must be included in investigation reports of recordable beryllium disease (see DOE Order 231.1). Contact DOE (EH-6) for guidance on the content of the reports. Send copies of reports to DOE (EH-6).

6. Training. Implement a training program that provides workers exposed and potentially exposed to beryllium, and supervisors, managers, medical personnel, industrial hygienists, and others involved in beryllium activities and processes, with information concerning the proper handling and control of beryllium, hazards of exposure to beryllium, controls (e.g., engineering, administrative, and personal protective equipment) and work practices of the job assignment, minimization of worker exposure, the purpose and use of personal protective equipment, medical monitoring, and waste management and decontamination procedures.

7. Recordkeeping.

a. Maintain records of all beryllium inventory information, hazard assessments, exposure measurements, controls, and medical surveillance pursuant to DOE Order 440.1 paragraph 4.i.(2) to demonstrate program effectiveness.

b. Maintain the records in an electronic, easily retrievable manner for transmittal to DOE Headquarters on request.

c. Create links between data sets on working conditions and health outcomes to serve as a basis for understanding the beryllium health risk.

8. Performance Feedback.

a. Conduct periodic analysis and assessment of monitoring results, hazards identified, medical surveillance results, attainment of exposure reduction and minimization goals, and occurrence reporting data.

b. Feed back results to line managers, planners, worker protection staff, workers, medical staff, and others to ensure that needed information is available to maintain and improve all elements of the CBDPP continuously.

ATTACHMENT 2

CONTRACTOR REQUIREMENTS DOCUMENT (CRD)

PERFORMANCE ELEMENTS FOR DEVELOPMENT OF A CHRONIC BERYLLIUM DISEASE PREVENTION PROGRAM (CBDPP)

The contractor shall comply with the requirements contained herein and apply the requirements of this CRD to the subcontractors awarded subcontracts involving exposure and the potential for occupational exposure to beryllium at a DOE-owned or -leased facility.

1. Implement a CBDPP that augments and is integrated into the worker protection program requirements specified in DOE Order 440.1 (5483.1B, 5480.4, 5480.8A, and 5480.10 for operations contractually not covered by 440.1), for the protection of workers from the hazards of occupational exposures to beryllium. In addition, integrate the CBDPP into those operations or activities covered under 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response," and into the sites Work Smart Standards Process and Integrated Safety Management Program.

2. Submit CBDPPs to DOE Departmental Elements for review and have approved CBDPPs within six months after the effective date of this Notice.

3. FOR DEFENSE PROGRAMS CONTRACTORS ONLY: Submit CBDPPs to the Assistant Secretary for Defense Programs (DP-1) for review and have approved CBDPPs within 6 months after the effective date of this Notice.

4. Include in the CBDPP written plans, schedules, and other measures for achieving the objectives of DOE Notice 440.1 and requirements of this CRD. The program shall address at a minimum, the following: baseline inventory and sampling, hazard assessment, exposure monitoring, medical surveillance, training, exposure reduction and minimization, recordkeeping, and performance feedback. The CBDPP shall be approved by the contractor's site senior health and safety executive and the Head of the DOE Field Organization.

5. The objectives for DOE's CBDPP are to:

    a. Conduct comprehensive inventory and hazard assessments for beryllium by qualified professional industrial hygienists to ensure that current workers and the public are not exposed to beryllium.

b. Minimize the number of current workers and their exposure when beryllium is a potential or known hazard, by providing appropriate levels of controls and exposure reduction and minimization measures and goals for beryllium work activities where potential risk of exposure to beryllium warrants.

c. Conduct medical surveillance on beryllium-exposed current workers to ensure the early detection of disease and beryllium sensitization prior to diagnosis of chronic beryllium disease (CBD).

d. Collect and analyze performance feedback data in the form of exposure monitoring and medical surveillance results to demonstrate the effectiveness of the CBDPP and to enhance the program.

6. Ensure all aspects of the CBDPP are managed and implemented by professionally and technically qualified industrial hygienists and medical personnel.

7. CHRONIC BERYLLIUM DISEASE PREVENTION PROGRAM. Implement the following that augments and is integrated into the worker protection program requirements specified in DOE Order 440.1, Attachment 2, "Contractor Requirements Document."

a. Baseline Inventory and Sampling. Develop a baseline inventory of beryllium locations and operations; identify exposed and potentially exposed current workers by location; and conduct sampling.

(1) Conduct a records review and employee interviews.

(2) Document the presence and locations of beryllium on site.

(3) Conduct, where appropriate, the monitoring required by paragraphs 7.c.(2) through (4) below.

b. Hazard Assessment.

(1) Conduct a beryllium hazard assessment and determine whether in-depth analysis is warranted.

(2) Conduct in-depth analysis, where appropriate, to ascertain the nature of the exposure risk to beryllium.

(3) Include in the beryllium hazard assessment an analysis of existing conditions, exposure data, medical surveillance trends, and the exposure potential of planned activities.

c. Exposure Monitoring.

(1) Identify the operations and areas in which workers must be monitored.

(2) Conduct personal breathing zone sampling for all workers exposed and potentially exposed to beryllium, or provide the rationale for monitoring a limited subset of workers.

(3) Conduct area sampling where appropriate to determine operational control.

(4) Conduct surface sampling to determine housekeeping conditions and to identify contamination that has the potential to become airborne.

(5) Establish the required frequency of monitoring by using a risk-based (tailored) approach.

(6) Require additional monitoring when warranted due to changes in operations or procedures, or as necessary to ensure that exposure reduction and minimization goals are met.

d. Exposure Reduction and Minimization. Manage and control exposures to beryllium by: reducing airborne levels of beryllium to as-low-as practical, minimizing the number of current workers exposed and potentially exposed to beryllium, minimizing the number of opportunities to be exposed, and setting reasonable exposure reduction and minimization goals using a risk-based (tailored) approach. Elements of reduction and minimization strategies include:

(1) Developing a documented program that includes exposure reduction and minimization goals using a risk-based (tailored) approach, a plan for meeting goals, measures that will be used to assess status of attaining goals, and the rationale for determining reduced and minimized exposures.

(2) Using administrative action levels that trigger actions to reduce or minimize worker exposure and the potential for exposures.

(3) Establishing contamination control to preclude exposures to the extent practical.

(4) Implementing work control strategies to reduce exposures to as-low-as-practical using the established hierarchy of industrial hygiene controls (i.e., engineering and administrative controls, and personal protective equipment) and to reduce the potential for worker exposure.

(5) Documenting the rationale used for determining reduced and minimized exposures.

e. Medical Surveillance. Offer to enroll in a medical surveillance program all workers at risk for chronic beryllium disease (CBD) due to exposure or potential exposure to beryllium.

(1) Maintain an updated roster of workers at risk for CBD.

(2) Conduct pulmonary medical histories and lung function tests as part of the preplacement examination for workers to be assigned to beryllium areas. If the occupational medicine physician concludes that the medical history and the lung function test results warrant a chest x-ray, it must be offered to the worker.

(3) Provide on a voluntary basis, beryllium-specific peripheral blood lymphocyte proliferation testing, or other available preferred beryllium-specific tests considered appropriate by an occupational medicine physician, to screen for beryllium sensitization and provide early detection of CBD. Physicians must notify workers of the procedures and associated risks of the tests.

(4) Workers' occupational histories and clinical stages of the disease must be included in investigation reports of recordable beryllium disease (see DOE Order 231.1). Contact DOE (EH-6) for guidance on the content of the reports. Send copies of reports to DOE (EH-6).

f. Training. Implement a training program that provides workers exposed and potentially exposed to beryllium, and supervisors, managers, medical personnel, industrial hygienists, and others involved in beryllium activities and processes, with information concerning the proper handling and control of beryllium, hazards of exposure to beryllium, controls (e.g., engineering, administrative, and personal protective equipment) and work practices of the job assignment, minimization of worker exposure, the purpose and use of personal protective equipment, medical monitoring, and waste management and decontamination procedures.

g. Recordkeeping.

(1) Maintain records of all beryllium inventory information, hazard assessments, exposure measurements, controls, and medical surveillance pursuant to DOE Order 440.1 paragraph 4.i.(2) to demonstrate program effectiveness.

(2) Maintain the records in an electronic, easily retrievable manner for transmittal to DOE Headquarters on request.

(3) Create links between data sets on working conditions and health outcomes to serve as a basis for understanding the beryllium health risk.

h. Performance Feedback.

(1) Conduct periodic analysis and assessment of monitoring results, hazards identified, medical surveillance results, attainment of exposure reduction and minimization goals, and occurrence reporting data.

(2) Feed back results to line managers, planners, worker protection staff, workers, medical staff, and others to ensure that needed information is available to maintain and improve all elements of the CBDPP continuously.