



## Department of Energy

Washington, DC 20585

EXEC-2010-002703

February 19, 2010

MEMORANDUM FOR DR. STEVEN E. KOONIN  
UNDER SECRETARY FOR SCIENCE

FROM: GLENN S. PODONSKY  
CHIEF HEALTH, SAFETY AND SECURITY OFFICER  
OFFICE OF HEALTH, SAFETY AND SECURITY

SUBJECT: ACTION: Approval of a Permanent Variance Regarding Static  
Magnetic Fields at Brookhaven National Laboratory (Variance 1021)

ISSUE: This memorandum constitutes the Chief Health, Safety and Security Officer's recommendation that the Under Secretary for Science approve a permanent variance (Variance 1021) from the Threshold Limit Values (TLV<sup>®</sup>) for static magnetic fields in the American Conference of Governmental Industrial Hygienists (ACGIH) "2005 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices."

The variance consists of replacing the 2005 TLVs<sup>®</sup> for static magnetic fields with the 2009 TLVs<sup>®</sup>, as well as the specific conditions and commitments to provide safe working conditions made by Brookhaven Science Associates (BSA).

BACKGROUND: Title 10, Code of Federal Regulations (C.F.R.), part 851, "Worker Safety and Health Program" (Rule), requires contractors to comply with the ACGIH "2005 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices." In situations where verbatim compliance with a standard is not practical, the contractor may request a variance from the provisions of the Rule; however, the contractor must commit to specific alternative means of providing equivalent safety.

The Rule provides to Under Secretaries the authority to approve variances and requires the Chief Health, Safety and Security Officer to provide a recommendation for approval or denial of the variance. The Office of Health, Safety and Security (HSS) agrees with the Office of Science (SC) to approve this variance. Copies of SC's approval and the BSA variance application are attached.

JUSTIFICATION: The 2005 TLVs<sup>®</sup> for static magnetic fields were established during 1990-1997 based on the information available at those times. ACGIH more recently found that some of those TLVs<sup>®</sup> were unnecessarily restrictive. ACGIH's 2009 "Static Magnetic Fields: TLV<sup>®</sup> Physical Agents 7th Edition Documentation," states "Extensive recent research with laboratory systems and human volunteers, together with modeling studies, have provided evidence that exposure of workers to higher field levels without time averaging will not result in serious or irreversible health effects." ACGIH subsequently revised the static magnetic fields TLVs<sup>®</sup>, which included eliminating some values and adding a new value for special conditions, such as operating and maintaining the magnetic resonance imaging equipment used for research at Brookhaven National Laboratory.



Based upon a review by HSS subject matter experts, HSS recommends approval of BSA's variance application contingent upon implementation of the specific conditions, practices, means, methods, operations, or processes being used or proposed to provide workers a place of employment that is as safe and healthful as would result from compliance with the standard from which the variance is sought as required by 10 C.F.R. 851.31, "Variance Process."

RECOMMENDATION: That the Under Secretary for Science approve this variance.

APPROVE: AGS

DISAPPROVE: \_\_\_\_\_

DATE: 2/24/10

#### Attachments

cc w/attachments:

William F. Brinkman, SC-1

George J. Malosh, SC-3

John S. Boulden, HS-40