

**ORDER**

**DOE O 443.1B**

Approved: 3-17-2011

# **PROTECTION OF HUMAN RESEARCH SUBJECTS**

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**U.S. DEPARTMENT OF ENERGY**  
Office of Science



## PROTECTION OF HUMAN RESEARCH SUBJECTS

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1. PURPOSE. To establish Department of Energy (DOE)-specific policy and principles for the protection of human subjects involved in DOE research, and DOE procedures and responsibilities for implementing the policy and requirements set forth in Title 45 Code of Federal Regulations (CFR) Part 46 and ~~10 CFR Part 745, and the Secretarial Policy Memorandum on Military or Intelligence Related Human Subject Research, December 9, 2009.~~
2. CANCELLATION. This Order cancels DOE O 443.1A, *Protection of Human Subjects*, dated 12-20-07; and DOE P 443.1A, *Protection of Human Subjects*, dated 12-20-07.

Cancellation of a directive does not, by itself, modify or otherwise affect any contractual or regulatory obligation to comply with the Order. Contractor Requirements Documents (CRDs) that have been incorporated into a contract remain in effect throughout the term of the contract unless and until the contract or regulatory commitment is modified to either eliminate requirements that are no longer applicable or substitute a new set of requirements.

3. APPLICABILITY.

- a. Departmental Applicability. Except for exemption in paragraph 3.c., this Order applies to all Departmental elements.

The Administrator of the National Nuclear Security Administration (NNSA) shall ensure that NNSA employees, contractors, and elements comply with their respective responsibilities under this directive. Nothing in this Order shall be construed to interfere with the NNSA Administrator's authority under Section 3212(d) of Public Law (P.L.) 106-65 to establish Administration-specific policies, unless disapproved by the Secretary.

In accordance with the responsibilities and authorities assigned by Executive Order 12344, codified at 50 CFR Parts 2406 and 2511, and to ensure consistency throughout the joint Navy/DOE Naval Nuclear Propulsion Program, the Deputy Administrator for Naval Reactors (Director) will implement and oversee requirements and practices pertaining to this Directive for activities under the Director's cognizance, as deemed appropriate.

- b. DOE Contractors. Except for the exemption in paragraph 3.c., the Contractor Requirements Document (CRD), Attachment I, sets forth the requirements of this Order that shall apply to contracts that include the CRD. The CRD shall be included in contracts (i.e., those contracts that include the clause at 48 CFR Part (DEAR) 970.5204-2, Laws, regulations, and DOE directives) for the management or operation of a DOE-owned or -leased facility that involves human subjects research (HSR) as defined in paragraph 7.h., and comprehensively explained in Paragraph 4.a., irrespective of the party conducting the HSR under the contract.

For all other contracts that involve HSR, the applicable requirements set forth in the CRD shall be included in the contract terms and conditions as appropriate.

c. Exemptions for DOE O 443.1B.

Any requests for partial or full exemptions from the requirements of this Order shall be submitted in writing to the DOE Human Subjects Protection (HSP) Program Manager (and when an NNSA element is involved, the NNSA HSP Program Manager). An exemption may be recommended to the Secretary or the Secretary's designee by the DOE HSP Program Manager (or by the NNSA HSP Program Manager when an NNSA element is involved) after concurrence by the DOE Institutional Official (see paragraph 7f). The basis for granting or denying exemption requests shall be set forth in writing.

Exemption. Bonneville Power Administration is exempt from the requirements of DOE O 443.1B.

4. REQUIREMENTS. Research using human subjects provides important medical and scientific benefits to individuals and to society. The need for this research does not, however, outweigh the need to protect individual rights and interests. DOE policy regarding this issue is established in the Federal Policy for the Protection of Human Subjects, 45 CFR Part 46, Protection of Human Subjects, and in 10 CFR Part 745, DOE's implementation of Subpart A of 45 CFR Part 46.

a. Approvals.

- (1) No HSR conducted with DOE funding, at DOE institutions (regardless of funding source), or by DOE or DOE contractor personnel (regardless of funding source or location conducted), whether done domestically or in an international environment, including classified and proprietary research, shall be initiated without both a Federal-wide Assurance (FWA) and approval by the cognizant Institutional Review Board (IRB) in accordance with 10 CFR Part 745.103.
- (2) It is Departmental policy that Human Terrain Mapping (HTM), defined in paragraph 7.i., is managed as HSR and is subject to this Order.
  - (a) HTM projects, conducted with DOE funding, at DOE sites/institutions (regardless of funding source), or by DOE or DOE contractor personnel (regardless of funding source or location conducted), whether done domestically or in an international environment, including classified and proprietary research, shall be strictly limited to only those projects involving the analysis and modeling of de-identified data.
  - (b) Statements of work for HTM projects shall be submitted to the HSP Program Manager (and when an NNSA element is involved,

the NNSA HSP Program Manager), for DOE Headquarters review and approval prior to initiation. If the project is to be conducted by or for the intelligence community, the Office of Intelligence must also review and approve it prior to initiation. The HSP Program Manager(s) and the Office of Intelligence shall engage the recognized DOE site IRB, and as needed, the principal investigator (PI) and/or sponsor, in clarifying whether the proposed project is HTM and if so, that the data to be used will be de-identified. Additionally, the PI will be asked to provide written verification that only de-identified HTM data (as defined in paragraph 7d) will be used.

- (c) The recognized DOE site IRB is the only entity authorized to determine whether the HTM data received by the PI after project initiation meets DOE criteria for de-identification. If the DOE site does not manage or operate its IRB, then the Central DOE IRB shall be the responsible IRB.
  - (d) All Work for Others funded projects, including HTM activities, shall comply with the applicable DOE O 481.1C Admin Chg 2, *Strategic Partnerships Projects (Formerly Known as Work for Others (Non-Department of Energy Funded Work))*, dated 1-24-05, or DOE O 484.1 Admin Chg 2, *Reimbursable Work for the Department of Homeland Security*, dated 8-17-06.
  - (e) If, in the case the sponsor requests assistance in the de-identification of HTM data prior to start of any work on the sponsor's project and/or re-identification of data following completion of the project, DOE sites may provide such services under a separate contract and/or task order with the sponsor by following the appropriate DOE standard operating procedure approved by the DOE Institutional Official, DOE Office of Science.<sup>1</sup>
- b. Solicitations. Any solicitation issued by a DOE element for research involving human subjects shall require compliance with the requirements of this Order, 10 CFR Part 745, and 45 CFR Part 46.
  - c. Contracts, Financial Assistance Agreements, and Other Agreements. Any DOE contract, financial assistance agreement, or other agreement involving HSR shall require compliance with the requirements set forth in the CRD associated with

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<sup>1</sup> It should be noted that: 1) only limited communications, if needed, may take place between the organization de-identifying and/or re-identifying the sponsor's data and the organization performing work on the sponsor's task; b) the identified dataset shall not be shared with the individual who will perform work on the sponsor's task; and c) the de-identified dataset shall be sent directly by the sponsor to the individual performing work on the sponsor's task and not by the organization at the DOE site that de-identified it.

this Order (Attachment I), 10 CFR Part 745, and 45 CFR Part 46. See also CRD (Attachment 1).

- d. Notification. The Human Subjects Protection Program Manager (HSP) Program Manager (and when an NNSA element is involved, the NNSA HSP Program Manager) shall be:
- (1) Notified in writing prior to issuance of any new proposal involving HSR, even if it meets the regulatory definition of exempt HSR as outlined in 10 CFR Part 745.101(b), that involves:
    - (a) an institution without an established IRB;
    - (b) a foreign country;
    - (c) a potential for significant controversy (e.g., negative press or reaction from stakeholder or oversight groups);
    - (d) research subjects in a protected class (fetuses, pregnant women, and in vitro fertilization; prisoners; or children); or
    - (e) the generation or use of classified ~~or unclassified-controlled~~ information.
  - (2) The DOE HSP Program Manager (and when an NNSA element is involved, the NNSA HSP Program Manager) shall be notified immediately upon a finding of a suspected or confirmed data breach involving Personally Identifiable Information (PII) in printed or electronic form and reported to the DOE-Cyber Incident Response Capability in accordance with the requirements of DOE O 206.1. The appropriate HSP Program Manager shall also be informed of any corrective actions taken and shall concur on the plan for any remaining corrective actions.
  - (3) The appropriate HSP Program Manager shall be notified in writing within 48 hours, with a description of corrective actions taken, and shall concur on the plan for any remaining corrective actions, following:
    - (a) significant adverse events, unanticipated problems, and complaints about the research, suspension or termination of IRB approval of research;
    - (b) known or potential incidents of noncompliance with requirements of this Order, 10 CFR Part 745, 45 CFR Part 46.
  - (4) The appropriate HSP Program Manager shall be notified in writing immediately upon the appointment of a new DOE Site IRB Chair or DOE Site Institutional Official.

- e. Reporting. HSR projects shall be reported annually to the HSR Projects Database (HSRD) in accordance with directions and schedules provided by the **appropriate** HSP Program Manager.
- f. Protected Classes. Research involving fetuses, pregnant women, and in vitro fertilization; prisoners; or children shall be conducted in accordance with 45 CFR Part 46 Subparts B, C, and D.
- g. IRB Registration. Each IRB that is designated by an institution under an assurance of compliance approved for Federal-wide use by the Office for Human Research Protections (OHRP) under 45 CFR Part §46.103(a) and that reviews research involving human subjects conducted or supported by the Department of Health and Human Services (HHS) shall be registered with HHS in accordance with 45 CFR Part 46 Subpart E.

5. RESPONSIBILITIES.

All DOE employees, contractors, financial assistance recipients, and parties to other DOE agreements share the responsibility to protect the rights and welfare of human research subjects. The Secretary of Energy is responsible for oversight of the conduct of DOE-related human subject research.

- a. Under Secretary for Science **and Energy**.
  - (1) Monitors implementation of this Order, 10 CFR Part 745, and 45 CFR Part 46, within DOE in accordance with policy established by the Secretary and in consultation with the NNSA, as appropriate.
  - (2) Determines what constitutes Departmental-related HSR, in consultation with the NNSA.
  - (3) Ensures implementation of human research subject protection measures in accordance with the requirements of this Order, 10 CFR Part 745, and 45 CFR Part 46, in consultation with the NNSA.
  - (4) Designates the DOE Institutional Official. For DOE, the Institutional Official is the Associate Director for Biological and Environmental Research, Office of Science.
  - (5) Designates the DOE HSP Program Manager. For DOE, the HSP Program Manager resides within the Office of Science's Office of Biological and Environmental Research.
  - (6) Delegates review and approval of statements of work for HTM projects submitted by DOE's non-NNSA sites to the **DOE** HSP Program Manager.
- b. Under Secretary for Nuclear Security and Administrator of the National Nuclear Security Administration designates the NNSA HSP Program Manager and

delegates review and approval of statements of work for HTM projects submitted by DOE's NNSA Sites to the NNSA HSP Program Manager. The NNSA HSP Program manager resides within the Office of the ~~Associate Administrator for Safety, Infrastructure and Operations~~~~Senior Adviser for Environment, Safety, and Health.~~

- c. The DOE Institutional Official is the Senior DOE Official, responsible for overseeing and monitoring Departmental implementation of the requirements of this Order, 10 CFR Part 745, ~~and~~ 45 CFR Part 46, ~~-as well as Executive Orders, Presidential Memoranda, and other Presidential directives, as applicable,~~ in consultation with the NNSA, as appropriate. The DOE Institutional Official is also responsible for: 1) ensuring the Central DOE Institutional Review Boards (IRB) ~~comply~~~~ies~~ with applicable Federal and DOE regulations; 2) ensuring the OHRP Federalwide Assurance (FWA) and IRB registration are properly maintained and current; and 3) formally appointing ~~all members of the Central IRBs. the Chair and the Vice Chair after selection by the Board.~~ The Institutional Official must concur on all requests for partial or full exemptions from the requirements of this Order.
- d. DOE HSP Program Manager.
  - (1) Develops procedures for the HSP program in consultation with the NNSA HSP Manager, as appropriate.
  - (2) Prepares and updates guidance to be followed for obtaining approval for HSR in consultation with the NNSA HSP Manager, as appropriate.
  - (3) Reviews/approves (or when an NNSA element is involved, reviews and may recommend approval of) local plans to correct any noncompliance or to mitigate adverse study events, ensuring they comply with applicable HSP requirements.
  - (4) Reviews and approves statements of work for HTM projects submitted by DOE's non-NNSA sites. Ensures compliance with DOE requirements [see paragraph 4.a.(2)], and, for Work for Others HTM projects, coordinates with appropriate Headquarters Work for Others leads prior to approving such statements of work for initiation. Ensures Site Offices and M&O contractors are aware of decisions concerning proposed HTM work.
  - (5) Provides advice and guidance on evolving Departmental and national bioethics and regulatory issues regarding human research subject protection and helps identify and resolve program/project concerns in consultation with the NNSA HSP Program Manager, as appropriate.
  - (6) Develops and conducts educational programs on bioethics and human research subjects protection requirements, practices, and procedures relevant to DOE employees, DOE contractor personnel, financial



assistance recipients, and the public in consultation with the NNSA HSP Program Manager, as appropriate.

- (7) Regularly conducts institutional performance reviews to assess compliance with human research subject protection requirements in consultation with the NNSA HSP Program Manager, as appropriate.
- (8) Serves as the Chair of the DOE Human Subjects Working Group and as official DOE representative to groups with bioethics and HSP interests. The NNSA HSP Program Manager shall be invited to attend all such meetings and to co-chair meetings, as appropriate.
- (9) Makes recommendations to the Secretary, after concurrence from, and through the Institutional Official, regarding requests for exemptions from the requirements of this Order and satisfies the advance notice and publication requirements of 10 CFR Part 745.101(i) prior to the granting of any exemption (in consultation with the NNSA HSP Program Manager, as appropriate).
- (10) Concurs on HSP provisions in interagency agreements, in consultation with the NNSA HSP Program Manager, as appropriate.
- (11) Maintains the HSR Projects Database for DOE.

e. NNSA HSP Program Manager.

- (1) When an NNSA element is involved, reviews requests for exemptions to requirements of this Order and makes recommendations to the Secretary through the NNSA Administrator after concurrence from the Institutional Official. Ensures that the advance notice and publication requirements of 10 CFR Part 745.101(i) are met prior to the granting of any exemption. Also reviews and approves statements of work for HTM projects submitted by NNSA sites. Ensures compliance with DOE/NNSA requirements and, for Work for Others HTM projects, coordinates with the NNSA Office of ~~Institutional~~ **Strategic Partnership** Programs prior to approving such projects for initiation. Ensures Site Offices and M&O Contractors are aware of decisions concerning proposed HTM work.
- (2) Works with the DOE HSP Program Manager, as outlined in paragraph 5.

f. Office of Intelligence.

- (1) Reviews and approves, prior to initiation, statements of work for HTM projects received from members of the intelligence community.
- (2) Reviews and approves statements of work for non-HTM, intelligence-related HSR prior to initiation.

- (3) In these reviews, coordinates with the appropriate HSP Program Manager.

g. Secretarial Officers or their Designees.

- (1) Ensure that all proposals for research, studies, tests, surveys, surveillance, or other data collection are reviewed to identify research involving human subjects.
- (2) Ensure that any questions or uncertainties regarding the applicability of human research subjects protection requirements to such proposals, and any other issues and concerns regarding the requirements of this Order, are promptly referred to the appropriate HSP Program Manager for resolution.
- (3) Ensure that the contracting officer is advised when work statements for proposed agreements include HSR to ensure that the CRD or its requirements (as appropriate) will be applied to HSR conducted with DOE funding, at DOE institutions, or by DOE personnel under agreements other than site/facility management contracts, such as support services contracts, grants, cooperative agreements, work-for-others agreements, and interagency agreements.
- (4) Ensure that the contracting officer, after being notified of the affected contracts, incorporates the CRD into the affected contracts by way of the Department of Energy Acquisition Regulations (DEAR) Laws, regulations, and directives clauses included in those contracts. In the case of contracts or other agreements requiring contractor performance of activities covered by the CRD, but which do not contain the Laws, regulations, and DOE directives clause, the contracting officer will work to include the requirements as appropriate.
- (5) Ensure their staffs and field elements comply with the requirements of this Order, including the notification requirements in paragraph 4d.
- (6) Ensure relevant personnel actively participate in human research subjects protection training and educational programs.
- (7) Ensure that self-assessments are periodically conducted to verify compliance with the requirements of this Order.
- (8) At their discretion, conduct further review and approve or disapprove research that has been approved by the IRB. (Note: Secretarial Officers or their designees may not approve HSR that has not been approved by an IRB. See 10 CFR Part 745.112.)
- (9) Ensure appropriate oversight of the administration of research subjects protection programs of contractors and financial assistance recipients under their cognizance, and other parties to DOE agreements, to ensure

compliance with applicable human research subjects protection requirements.

- (10) Ensure that the DOE HSP Program Manager and the NNSA HSP Manager are involved in negotiating those portions of interagency agreements that address HSR.
- (11) Appoint a point of contact for interacting with the appropriate HSP Program Manager on program-related and/or Department-wide issues.

h. DOE Field/Site Offices.

- (1) Ensure contracts, financial assistance agreements, and other agreements involving HSR require compliance with the requirements set forth in the CRD associated with this Order (Attachment 1), 10 CFR Part 745, and 45 CFR Part 46.
- (2) Ensure that contractors establish and maintain a process for:
  - (a) Identifying and reporting HTM work according to DOE Policy and this Order;
  - (b) Notifying the HSP Program Manager(s) as required in paragraph 1 of the CRD; and
  - (c) Training relevant personnel in HSP requirements as required by paragraph 10 of the CRD.

6. REFERENCES.

- a. DOE O 206.1, *Department of Energy Privacy Program*, dated 1-16-09, which ensures compliance with privacy requirements;-establishes a Departmental training and awareness program for all DOE Federal and contractor employees to ensure personnel are cognizant of their responsibilities for safeguarding Personally Identifiable Information (PII) and complying with the Privacy Act; and provides Departmental oversight to ensure compliance.
- ~~b. DOE O 241.1B, *Scientific and Technical Information Management*, dated 12-13-10, which establishes Department of Energy (DOE) requirements and responsibilities to ensure that scientific and technical information (STI) is identified, processed, disseminated, and preserved in a manner that (a) enables the scientific community and the public to locate and use the unclassified and unlimited STI resulting from DOE's research and related endeavors and (b) ensures access to classified and unclassified controlled STI is protected according to legal or Departmental requirements.~~

- ~~e.~~ ~~DOE O 412.1A, *Work Authorization System*, dated 4-21-05, which provides the policy, responsibilities, and procedures for authorizing and administering DOE-funded work performed under DOE contracts.~~
- ~~d.b.~~ DOE P 481.1, *DOE's Policy Regarding Laboratories, Plants and Sites Engaging in Strategic Partnership Projects with Other Federal Agencies, Independent Organizations, and the Private Sector*, dated 12/17/14, which sets the context in which DOE and its laboratories, plants, and sites should pursue Strategic Partnership Projects (SSP) with other Federal government agencies, state and local institutions, universities, foreign entities and/or private companies. The Policy is applicable to the DOE laboratories, plants, and sites, and to the DOE programs that own them and facilitate their work.
- ~~e.c.~~ DOE O 481.1C Admin Chg 2, *Strategic Partnerships Projects (Formerly Known as Work for Others (Non-Department of Energy Funded Work))*, dated 1-24-05, which establishes the policy, responsibilities, and procedures for authorizing and administering work for non-DOE entities by DOE/National Nuclear Security Administration (NNSA) and/or their respective contractor personnel or the use of DOE/NNSA facilities that is not directly funded by DOE appropriations.
- ~~f.d.~~ DOE M 481.1-1A Chg 1, *Reimbursable Work for Non-Federal Sponsors Process Manual*, dated 9-28-01, provides detailed requirements to supplement DOE O 481.1C, ~~*Work For Others (Non-Department of Energy Funded Work)*, dated 1-24-05,~~ which establishes requirements for the performance of work for non-DOE/non-NNSA entities by DOE/NNSA/contractor personnel and/or the use of DOE/NNSA facilities that is not directly funded by DOE/NNSA appropriations.
- e. DOE OM 483.1-1A, *DOE Cooperative Research and Development Agreements Manual*, dated 11-6-12-013, which provides detailed requirements to supplement DOE O 483.1, DOE Cooperative Research and Development Agreements, dated 1-12-01, which establishes requirements for the performance of technology transfer through the use of Cooperative Research and Development Agreements (CRADAs). DOE O 484.1, *Reimbursable Work for the Department of Homeland Security*, dated 8-17-06. The Order establishes DOE policies and procedures for the acceptance, performance, and administration of reimbursable work directly funded by the Department of Homeland Security.
- ~~g.f.~~ DOE O 484.1 Admin Chg 2, *Reimbursable Work for the Department of Homeland Security*, dated 8-17-06, establishes DOE policies and procedures for the acceptance, performance, and administration of reimbursable work directly funded by the Department of Homeland Security.
- ~~h.g.~~ 10 CFR Part 600, DOE Financial Assistance Rules, which provides the policies and procedures for administration and management of all DOE financial assistance activities.

- ~~i.h.~~ 10 CFR Part 602, Epidemiology and Other Health Studies Financial Assistance Program, which sets forth the policies and procedures applicable to the award and administration of financial assistance agreements and cooperative agreements for health-related research, education/training, conferences, communication, and related activities.
- ~~j.i.~~ 10 CFR Part 605, Office of Science Financial Assistance Program, as explained at [www.er.doe.gov/grants/605.asp](http://www.er.doe.gov/grants/605.asp), which provides policies and procedures for the administration and management of basic and applied research financial award agreements awarded by the Office of Science.
- ~~k.j.~~ 10 CFR Part 745, Protection of Human Subjects, which set Federal requirements for DOE for the protection of human subjects involved in research activities.
- ~~l.k.~~ 10 CFR Part 1008, Records Maintained on Individuals (Privacy Act) which establishes the procedures to implement the Privacy Act of 1974 (PL. 93-579, 5 U.S.C. 552a) within DOE of Energy.
- ~~m.l.~~ 45 CFR Part 46, Protection of Human Subjects, Subparts B, C, and D, which sets out DOE prescribed DHHS requirements for protected classes of human research subjects and Subpart E for IRB registration.
- ~~n.m.~~ The National Nuclear Security Administration Act, Title 32 of the National Defense Authorization Act for Fiscal Year 2000, Public Law No. 106-65; 50 USC 2401 et seq.
- ~~o.n.~~ The Freedom of Information Act, 5 USC Section 552, as amended, which establishes the right of citizens to request information from Federal agencies and establishes a framework of procedures to implement this right.
- ~~p.~~ ~~Secretarial Policy Memo on Military or Intelligence Related Human Subject Research, December 9, 2009, and related cover memo, February 18, 2010.~~
- ~~o.~~ DOE IRB Checklist for Reviewing Human Subjects Research Protocols that Utilize PII and DOE Checklist for Use by Researchers Conducting Human Subjects Research that Utilizes PII, Office of Biological and Environmental Research, ~~2009~~ (<http://humansubjects.energy.gov/other-resources/pii.htm>).
- ~~p.~~ DOE Policy Memorandum on Research Involving Intentional Modification of the Human Environment

7. DEFINITIONS.

- a. Appropriate HSP Program Manager. The DOE HSP Program Manager (and when an NNSA element is involved, the NNSA HSP Program Manager).
- b. Assurance. The written documentation, satisfactory to the Secretary of Energy, required from the prospective performing institution, that ensures institutional

compliance with and implementation of DOE and Department of Health and Human Services (DHHS) regulations for the protection of human research subjects. The only documentation currently meeting this requirement is a Federal-wide Assurance (FWA). See:

<http://ohrp.cit.nih.gov/efile/FwaStart.aspx>~~http://www.hhs.gov/ohrp/assurances/assurances\_index.html~~.

- c. Adverse Event. Any unfavorable medical occurrence in a human subject, including any abnormal sign (for example, abnormal physical exam or laboratory finding), symptom, or disease, temporally associated with the subjects participation in the research, whether or not considered related to the subject's participation in the research.
- d. De-identified Data. A data set that has no, or limited, identifiers and for which a person with current knowledge of generally accepted scientific principles determines that the risk that the information could be used, alone or in combination with other reasonably available information, by an anticipated recipient, to identify an individual who is a subject of the information, has been reduced to the extent practicable. A graded approach must be used in balancing de-identification of the datasets and the usability of the dataset to accomplish the needed research.
- e. DOE Human Subjects Protection Program Manager (DOE HSP Program Manager). The individual designated by the Under Secretary for Science and Energy to oversee the non-NNSA components of DOE's Human Subjects Protection Program.
- f. DOE Institutional Official. The Senior DOE Official responsible for overseeing and monitoring Departmental implementation of the requirements of 45 CFR Part 46, 10 CFR 745, *Protection of Human Subjects*, and this Order, in consultation with NNSA, as appropriate.
- g. DOE HSR Projects Database (HSRD). An unclassified compilation of summary information, which is available on the website at: <https://www3.ornl.gov/hsrdreport/>, [D] updated annually, on every ~~non-exempt~~ HSR project funded by DOE, conducted at DOE institutions or facilities, or performed with DOE or contractor personnel.
- g.h. Generalizable. Information/research findings that can be applied to populations or situations beyond that studied.

- i. Human Subject. A living individual about whom an investigator (whether professional or student) conducting research obtains

(1) Data through intervention or interaction with the individual, or

~~(1)~~(2) Identifiable private information.

*Intervention* includes both physical procedures by which data are gathered (for example, venipuncture) and manipulations of the subject or the subject's environment that are performed for research purposes. *Interaction* includes communication or interpersonal contact between investigator and subject. *Private information* includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record).

Private information must be readily identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects.

- ~~h. Human Subjects Research (HSR). Any systematic investigation (including research development, testing, and evaluation) involving intervention or interaction with individuals or using their personally identifiable information or materials, designed to develop or contribute to generalizable knowledge.<sup>2</sup> In addition to traditional biomedical and clinical studies, such research includes but is not limited to studies that—~~

- ~~(1) use humans to examine devices, products, or materials with the express purpose of investigating human-machine interfaces or evaluating environmental alterations when humans are the subjects being tested;~~
- ~~(2) use personally identifiable bodily materials such as cells, blood, tissues, urine, or hair, even if the materials were collected previously for a purpose other than the current research;~~
- ~~(3) collect and use personally identifiable information such as genetic information or medical and exposure records, even if the information was collected previously for a purpose other than the current research;~~
- ~~(4) collect personally identifiable or non-identifiable data, surveys, or questionnaires through direct intervention or interaction with individuals; and~~

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<sup>2</sup> ~~New information that has relevance beyond the population or program from which it was collected or information that is added to the scientific literature.—.~~

~~(5) — search for generalizable knowledge about categories or classes of subjects (e.g., linking job conditions of worker populations to hazardous or adverse health outcomes).~~

~~Human subject research does not include the following:~~

~~studies to improve the safety or execution of procedures that apply to routine occupational activities;~~

- ~~(1) occupational health surveillance of DOE Federal or contractor employees to determine apparent departures from typical health status and not for the purpose of obtaining generalizable knowledge; and~~
- ~~(2) employee surveys used as management tools to improve worker or contractor performance as long as the identity of the participant is protected.~~

- i. Human Terrain Mapping. Research and data gathering activities primarily conducted for military or intelligence purposes to understand the “human terrain,”—the social, ethnographic, cultural, and political elements of the people among whom the U.S. Armed Forces are operating and/or in countries prone to political instability. This work includes observations, questionnaires, and interviews of groups of individuals, as well as modeling and analysis of collected data, and may become the basis for U.S. military actions in such locations. In addition to Human Terrain Mapping (HTM), such activities are often referred to as human social culture behavior (HSCB) and human terrain systems (HTS) studies. It is DOE policy that HTM activities will be managed as HSR.
- j. HTM Data. Data collected or used as part of HTM efforts, as described above, as well as any auxiliary data on the same group(s) of individuals.
- k. NNSA Human Subjects Protection Designee (NNSA HSP Program Manager). The individual appointed by the NNSA Administrator to oversee the Human Subjects Protection Program for NNSA elements.
- l. Institution. Any public or private entity or agency (including Federal, State, and other agencies). This term refers to laboratories and other facilities managed by DOE, DOE contractors, or DOE financial assistance recipients.
- m. Institutional Review Board (IRB). A committee or board established by an institution that performs initial and continuing reviews of research involving human subjects, and is registered with the Office for Human Research Protections (OHRP) and designated on an FWA.
- n. Personally Identifiable Information. Any information collected or maintained about an individual, including but not limited to, education, financial transactions, medical history and criminal or employment history, and information that can be



used to distinguish or trace an individual's identity, such as his/her name, Social Security number, date and place of birth, mother's maiden name, biometric data, and any other personal information that is linked or linkable to a specific individual.

- o. Research. A systematic investigation, including research development, testing and evaluation, designed to contribute to generalizable knowledge. Activities which meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program which is considered research for other purposes. For example, some demonstration and service programs may include research activities.
  - p. Unanticipated Problem. In general, to be classified as an unanticipated problem, any incident, experience, or outcome should meet **all three** of the following criteria:
    - (1) Unexpected (in terms of nature, severity, or frequency) given (a) the research procedures that are described in the protocol-related documents, such as the IRB-approved research protocol and informed consent document; and (b) the characteristics of the subject population being studied
    - (2) Related or possibly related to participation in the research (*possibly related* means there is a reasonable possibility that the incident, experience, or outcome may have been caused by the procedures involved in the research)
    - (3) Likely to place subjects or others at greater risk of harm (including physical, psychological, economic, or social harm) than was previously known or recognized.
  - q. Work for Others. Work for non-DOE entities by DOE/NNSA and/or their contractors or use of DOE/NNSA facilities for work that is not directly funded by DOE/NNSA appropriations.
  - r. Sponsor. An entity that provides work for others funding.
8. CONTACT. Questions regarding this Order should be addressed to the DOE Program Manager, HSP Program, Office of Science, Office of Biological and Environmental Research, telephone 301-903-3213, or the NNSA HSP Program Manager, as appropriate. Information about the DOE HSP protection program may be found at <http://humansubjects.energy.gov/>.

BY ORDER OF THE SECRETARY OF ENERGY:



DANIEL B. PONEMAN  
Deputy Secretary



**CONTRACTOR REQUIREMENTS DOCUMENT  
DOE O 443.1B, PROTECTION OF HUMAN SUBJECTS**

Regardless of the performer of the work, the contractor is responsible for compliance with the requirements of this Contractor Requirements Document (CRD).

The contractor is responsible for flowing down the requirements of this CRD to subcontracts at any tier to the extent necessary to ensure the contractor's compliance with the requirements.

Note: Throughout this CRD, the term "Human Subjects Protection Program Manager (HSP Program Manager)" refers either to the DOE HSP Program Manager or to the NNSA HSP Program Manager except where otherwise noted.

As directed by the contracting officer, the contractor shall—

1. Ensure notification of the HSP Program Manager (and, when an NNSA element is involved, the NNSA HSP Program Manager):
  - a. Prior to initiation of any new HSR project, even if it meets the regulatory definition of exempt HSR as outlined in 10 CFR Part 745.101(b), involving:
    - (1) an institution without an established Institutional Review Board (IRB);
    - (2) a foreign country;
    - (3) the potential for significant controversy (e.g., negative press or reaction from stakeholder or oversight groups);
    - (4) research subjects in a protected class (fetuses, pregnant women, and in vitro fertilization; prisoners; or children); or
    - (5) the generation or use of classified ~~or unclassified controlled~~ information.
  - b. Within 48 hours of the following, and, provide a description of corrective actions taken immediately following the incident, as well as corrective actions to be taken for concurrence by the appropriate HSP Program Manager:
    - (1) any significant adverse events, unanticipated problems, and complaints about the research,
    - (2) any suspension or termination of IRB approval of research;
    - (3) any significant non-compliance with HSP Program procedures or other requirements, which shall be reported to the IRB for evaluation for further action with the appropriate HSP Program Manager;
  - c. Immediately, of a finding of a suspected or confirmed data breach involving PII in printed or electronic form and to the DOE-Cyber Incident Response Capability

immediately, in accordance with the requirements of the CRD associated with DOE O 206.1, and provide a description of any corrective actions taken within 48 hours and a description of corrective actions to be taken for concurrence by the appropriate HSP Program Manager.

- d. Upon appointment of a new DOE Site IRB Chair or DOE Site Institutional Official.
2. Ensure that research involving human subjects, regardless of source of funding, is conducted in accordance with applicable requirements. (See **also** 10 CFR Part 745 and 45 CFR Part 46).<sup>1</sup>
3. Ensure that contractor-issued solicitations or proposals for research, studies, tests, surveys, surveillance, or other data collection are reviewed to identify research involving human subjects and that any resulting agreements include the substance of the requirements in this CRD.
4. Ensure that no research involving human subjects, regardless of funding source, is initiated without prior IRB approval under the terms of an approved assurance covering the research.
5. Ensure that any Human Terrain Mapping (HTM) work complies with DOE requirements specified in this CRD, namely:
  - a. HTM projects, conducted with DOE funding, at DOE institutions (regardless of funding source), or by DOE contractor personnel (regardless of funding source or location of work conducted), whether done domestically or in an international environment, and including classified and proprietary research, shall be strictly limited to only those projects involving the analysis and modeling of de-identified data.
  - b. Documented process and procedures shall be developed to ensure that: 1) statements of work for HTM projects are submitted to the Site Office, for information, and to the appropriate HSP Program Manager (and when an NNSA element is involved, the NNSA HSP Program Manager), for DOE Headquarters review and approval, prior to initiation, and 2) relevant M&O personnel are trained in HTM requirements. If the project is to be conducted by or for the intelligence community, the Office of Intelligence must also review and approve it prior to project initiation. The HSP Program Manager(s) and the Office of Intelligence shall engage the recognized DOE site IRB and, if needed, the principal investigator (PI) and/or sponsor, in clarifying whether the proposed project is HTM, and if so, that the data to be used will be de-identified. Additionally, the PI will provide written verification that only de-identified data (as defined in paragraph 7d of this Order) will be used.

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<sup>1</sup> Ensure that research is reviewed at intervals appropriate to the degree of risk, but not less than once per year, to assess the risk to test subjects and to assure the risk is reasonable in relation to anticipated benefits.

- c. For Headquarters approved projects, the recognized DOE site IRB is the only entity authorized to determine whether the HTM data received by the PI after project initiation meets DOE criteria for de-identification. If the DOE site does not have an internal IRB, the Central DOE IRB will be the responsible IRB.
  - d. If, in the case the sponsor requests assistance in the de-identification of HTM data prior to start of any work on the sponsor's project and/or re-identification of data following completion of the project, DOE sites may provide such services under a separate contract and/or task order with the sponsor by following the appropriate DOE standard operating procedure approved by the DOE Institutional Official, DOE Office of Science.<sup>2</sup>
6. Submit an application for a Federal-wide Assurance (FWA) to the Office of Human Research Protections (OHRP) with Department of Health and Human Services (DHHS) and, once approved by DHHS, maintain this FWA covering proposed and ongoing HSR and provide a copy to the appropriate HSP Program Manager. The Secretary of Energy uses the approved FWA as appropriate written documentation from DOE Sites committing to institutional compliance with and implementation of DOE and DHHS regulations for the protection of human research subjects. See <http://ohrp.cit.nih.gov/efile/FwaStart.aspx> [http://www.hhs.gov/ohrp/assurances/assurances\\_index.html](http://www.hhs.gov/ohrp/assurances/assurances_index.html) [D2] and/or contact the DOE HSP Program Manager, Office of Science, Office of Biological and Environmental Research, telephone 301-903-3213, or the NNSA HSP Program Manager, as appropriate.
7. Periodically conduct self-assessments to ensure compliance with the HSP Program procedures and other requirements.
8. Prepare and submit an annual report for the HSR Projects Database in accordance with directions and schedules provided by the appropriate HSP Program Manager.
9. Submit requests for exemptions from these requirements in writing through the contracting officer to the appropriate HSP Program Manager.
10. Ensure relevant personnel actively participate in HSP training and educational programs.

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<sup>2</sup> It should be noted that: a) only limited communications, if needed, may take place between the organization de-identifying and/or re-identifying the sponsor's data and the organization performing work on the sponsor's task; b) the identified data set shall not be shared with the individual who will perform work on the sponsor's task; and c) the de-identified dataset shall be sent directly by the sponsor to the individual performing work on the sponsor's task and not by the organization at the DOE site that de-identified it.