



Ames Procedural Requirements

APR 8715.1

Effective Date: June 27, 2023
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COMPLIANCE IS MANDATORY

Subject: Chapter 51 – Field Research Safety Review Board

Responsible Office: Code QH / Occupational Safety, Health, and Medical Service Division

CHANGE LOG

Status [Baseline /Revision /Cancelled]	Document Revision	Date of Change	Description
Revision	2	6/8/2018	Changed chapter name from Extreme Environments Review Board to Field Research Safety Review Board. Removal of diving safety research review will be performed by a separate board. Removal of unused abbreviations.
Revision	3	11/2/2020	Administrative correction to update the citation of NPR 8621.1 in section 51.5 and add the NPR to P.4 Applicable Documents.
Revision	4	4/27/2021	Remove the revision letter from citation of NPR 8715.1.
Revision	5	6/27/2023	Removal of some references to the Scientific Diving Board and reference to that Board’s requirements in APR 8715.4. Minor edits for clarity or logic.

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PREFACE

P.1 PURPOSE

a. This manual sets forth safety and health policy and procedures and instructions for Ames Research Center (ARC) in an effort to prevent injury and illness in the workplace.

P.2 APPLICABILITY

- a. This directive is applicable to ARC and associated facilities.
- b. This directive applies to contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants, or agreements.
- c. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is recommended, but not required, "will" denotes an expected outcome, and "are/is" denotes descriptive material.
- d. In this directive, all document citations are assumed to be the latest version unless otherwise noted.

P.3 AUTHORITY

- a. NPR 1800.1, NASA Occupational Health Program Procedures
- b. NPR 8715.1, NASA Safety and Health Programs

P.4 APPLICABLE DOCUMENTS AND FORMS

- a. NPR 8621.1, NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping
- b. APR 8715.1 Chapter 4, Mishaps and Close Calls

P.5 MEASUREMENT/VERIFICATION

a. Verification of conformance to requirements in this directive are measured through Center and Responsible Organizational management reviews, self-assessments, and subsequent analysis and reports of conformance to requirements, as well as periodic internal audits.

P.6 CANCELLATION

- a. APR 8715.1 Chapter 51, Field Research Safety Review Board, dated June 8, 2018.

Eugene Tu
Director

DISTRIBUTION STATEMENT:

Internal and external distribution. APR 8715.1 Ames Health and Safety Manual Chapters are made available via a procurement website to anyone bidding a job at Ames. The exceptions are Chapter 7 – Ames Radiation Safety, Chapter 10 – Pressure System Safety, Chapter 12 – Explosives Safety, and Chapter 23 – Control of Narcotics and Other Controlled Drugs, which are not made public but can be viewed onsite.

CHAPTER 51 FIELD RESEARCH SAFETY REVIEW BOARD

51.1 Responsibilities

51.1.1 Safety and Mission Assurance Directorate (Code Q) shall:

- a. Provide guidance and assistance in the development and implementation of the Field Research Safety Review Board (FRSRB).
- b. Provide an Industrial Hygienist and a Systems Safety Specialist to be members of the FRSRB.
- c. As requested, review and evaluate research plans, specifications, and research submittals.
- d. Provide check out equipment and training to ensure safe operations of High-Risk Environment research with this procedure and all applicable governing regulatory agency regulations and guidelines.

51.1.2 The Ames Health Unit shall:

- a. Provide consultation to the FRSRB as requested.
- b. Provide exams as needed for NASA Ames Civil Servant staff prior to travel.
- c. On a cost reimbursable basis, provide supplies, medical training, etc. to the project.

51.1.3 Project Managers (PMs) shall:

- a. Ensure that all research meeting the definition of "high risk environments" (see Appendix A) is reviewed by the FRSRB.
- b. Ensure that all FRSRB action items levied are resolved and recommendations are considered.
- c. Provide safety, health, environmental, medical, and emergency response training to all research participants as required or needed for their safety and protection.
- d. Ensure that all Civil Servants and other participants in the field research are medically qualified and physically fit to perform their work safely.
- e. Ensure that they are aware of any medical conditions of field team members.
- f. The PM shall immediately report all injuries, illnesses, and close calls by using the online link at <https://nmis.sma.nasa.gov> or by calling the Ames mishap investigation program manager at (650) 604-4756. If the mishap involves hospitalization or medical evacuation, obtain instructions from the Occupational Safety, Health, and Medical Service Division (Code QH) as soon as practical.
- g. Ensure records are kept documenting the occurrence of any instance requiring medical attention in the field, noting any such occurrences and make them available to the individual or their physician.

51.1.4 **NASA employees who manage NASA-affiliated research projects** shall conduct operations in compliance with this procedure and applicable governing regulatory agency regulations and guidelines.

51.1.5 FRSRB Chairperson or Designee shall:

- a. Be responsible for the process and documentation of FRSRB Reviews and approve deployment of projects into high-risk field environments when the project manager has demonstrated capability to manage risks involved and comply with applicable regulations.
- b. Upon request, support mishap investigations from the NASA Safety Office and implement actions in accordance with NPR 8621.1.

c. Ensure administrative support for the FRSRB maintains a listing of all reviewed projects and their deployment dates.

51.2 FRSRB Review and Authorization Procedure

51.2.1 Initial Review Procedure

51.2.1.1 Before any field research begins in High-Risk Environments, the Project Manager shall complete and submit a project plan to the Chair of the FRSRB for review, level determination, and processing.

51.2.1.2 The proposed research may be considered exempt from the definition of high-risk environments and research may proceed without further reference to this instruction. Prior to submitting a project plan, an informal discussion with the FRSRB chair, or their designate, should be held to determine whether the research involves a high-risk environment.

51.2.1.3 The research will be classified as Level I or Level II by the FRSRB Chair.

51.2.2 Authorization for Level I and Level II Research

51.2.2.1 Level II research shall be reviewed and approved by a majority vote of the full FRSRB.

51.2.2.2 The FRSRB chair or their designee without full FRSRB approval may approve Level I research. Activities may begin immediately upon expedited approval by the FRSRB Chair, but shall be reviewed by the full FRSRB at the next available committee meeting.

51.2.2.3 The FRSRB Chair shall:

- a. Review the most current Project Plan.
- b. Request changes to the Project Plan.
- c. Upon approval, sign the project deployment plan.
- d. Write an explanation if the project plan approval is not granted.

51.2.2.4 After the Final Approval Form for Level I or Level II High Risk Environments Research is received, the PM shall not proceed until:

- a. Research participants have been thoroughly briefed and trained to the levels required in their plan.
- b. The PM has verified that all the requirements of the FRSRB have been satisfied or shall be satisfied as required by the FRSRB chair.

51.2.3 Continuation or Completion of Research

51.2.3.1 The FRSRB reserves the right to conduct reviews at intervals commensurate with the degree of risk of the research, but not to exceed a period of one year.

51.2.3.2 If the PM wants to continue the same or similar research the following year, he/she will need to submit a revised project plan. An organizational chart may be required to define management structure.

51.2.3.3 Within 60 days of completion of field research the FRSRB chair will be provided a debrief of any safety issues that occurred in the field work and lessons learned by the PM.

51.2.4 Requirements of the Project Plan

51.2.4.1 The plan should include the following separate sections, as applicable:

- a. The title of the proposed investigation.
- b. The name of the organization that will conduct the research or the organization in which the research will be conducted.
- c. The name of the PM and field team leader. There can be only one PM.
- d. For each field team member, the name and safety related qualifications and training of the member.
- e. The method for obtaining the name, contact information, and relationship of an emergency contact for each field team member.
- f. The purpose of the research (this is not for scientific merit review, but to understand context and environmental interaction during the proposed deployment). This should include the type of activities that will be performed in conducting the research that involve risk.
- g. The location, season, and expected environmental conditions where the research will be conducted.
- h. Modes of transportation used to reach the field site and to travel within the field site, and whether commercial or private transportation will be used.
- i. Description of the facilities which will house the field team.
- j. The proposed research schedule, including estimated beginning and ending dates.
- k. Summary of field techniques to be incorporated during research activities (e.g., sampling methods that involve use of chemicals, etc.).
- l. A written safety, health, and environmental plan for monitoring the safety and environmental aspects of the proposed research and a description of the safety and environmental precautions taken.
- m. A communication plan, both for intra-team communication and communication with Ames in the event of a mishap. This plan shall include nature of communication equipment that will be used.
- n. An evacuation plan, including the name, location, contact information, and distance to the nearest medical facility and a procedure for evacuation should it be needed.
- o. A Mishap Investigation Contingency Plan as defined in APR 8715.1, Chapter 4.
- p. A designated ARC Government employee (NASA Point of Contact) who shall be responsible if the PM is not an Ames Government employee.

51.2.4.2 Exceptions

- a. Diving marine research projects are not reviewed by the FRSRB. Requirements for diving marine research can be found in APR 8715.4, Standards of Scientific Diving.
- b. FRSRB review is not required if a project has been reviewed under the authority of one of the following established review boards and been granted authority to proceed in accordance with established procedures:
 - (1) Human Research Institutional Review Board
 - (2) Airworthiness Flight Safety Review Board (AFSRB)

(3) Diving Control Board

(4) If the project is being conducted under the auspices and oversight of another agency (e.g., USARP).

51.3 Recordkeeping

51.3.1 All FRSRB documents shall be kept by the FRSRB administrative facilitator. Examples of major documents include:

- a. FRSRB meeting minutes.
- b. FRSRB recommendations, actions, and emails.
- c. Training Records.
- d. Medical Surveillance Records (all medical surveillance records of NASA employees shall be located in the Ames Health Unit).

APPENDIX A. DEFINITIONS

High Risk Environment	<p>Any working environment at a field location that is extraordinary by its remote physical location, hazardous conditions, geography, altitude, weather, remoteness to medical assistance, and/or limited ability for rescue. The following factors are considered in determining if “High Risk Environments” are involved:</p> <ol style="list-style-type: none">a. All scuba diving operations are approved by the Diving Control Board. Unless other High Risk environment activities are involved, Scuba diving activities will not require separate review by the FRSRB.b. Operations occurring at:<ol style="list-style-type: none">(1) Elevations of 10,000 feet or higher.(2) Locations and seasons where extreme hot or cold temperatures may occur.(3) Isolated caves requiring special training and equipment.(4) Locations where small watercraft are used to access or cross open bodies of water.c. Operations in Antarctica or Arctic regions. Plan not required if the operation is supervised by US Antarctic Research Program or equivalent.d. Where any required medical evacuation is expected to take longer than 4 hours.e. U.S. National and State Parks: Research requires special permission from the park service if sampling is involved.f. Private land: Research requires special permission for sampling or other activities.g. International Research Sites require a project plan for review, whether or not the research site meets the definition of high risk otherwise.h. The field operation of sophisticated mechanical apparatus such as submarines, cranes/lifting devices, potentially hazardous transportation systems (All Terrain Vehicles (ATV's), Four-wheel drives, aircraft, small watercraft, etc.).
Project Manager (PM) (or Principal Investigator)	<p>Any researcher who has overall responsibility for all aspects of a funded and/or sponsored research project.</p>
Research	<p>A systematic investigation, including development, testing, and evaluation, designed to test a hypothesis, enable conclusions to be drawn, and thereby develop or contribute to knowledge in general. The research is described in a formal protocol that sets forth an objective and a set of procedures designed to reach it.</p> <ul style="list-style-type: none">• Funded Research: Research that is partially or completely underwritten by NASA through a contract, cooperative agreement, grant, or other funding mechanism.• Sponsored Research: Investigative and commercial experimental work approved by NASA to permit the utilization of NASA, U.S. Government, or foreign agency facilities, equipment, or personnel, including space and aircraft vehicles, whether or not NASA funds are used to support the research.• Level I Research: As determined by the FRSRB Chair, is previously approved minimally modified, or low to moderate risk field research.• Level II Research: As determined by the FRSRB Chair is at a medium or high risk based on the identified hazards and mitigation plans, remoteness, and degree of difficulty in performing evacuation if needed.

APPENDIX B. ACRONYMS

AFSRB	Airworthiness Flight Safety Review Board
APR	Ames Procedural Requirement
ARC	Ames Research Center
ATV	All-Terrain Vehicle
FRSRB	Field Research Safety Review Board
GPS	Global Positioning System
NPR	NASA Procedural Requirement
OSHA	Occupational Safety and Health Administration
PI	Principal Investigator
PM	Project Manager

APPENDIX C. FRSRB PROJECT REVIEW CHECKLIST

C.1 The impetus for initiating the NASA Ames Field Research Safety Review Board (FRSRB) derives from the need to protect employees to the extent possible from injury and illness while working in off-site field locations that pose unusual environmental conditions or involve research operations with intrinsic risk not normally ameliorated by governmental regulations or risks not normally encountered in routine research operations. The FRSRB integrates applicable regulatory agency requirements and NASA policy governing research-related work.

C.2 Required Documentation

___ Medical fitness approval for all NASA employees.

___ Project plan:

___ Project Title, Dates, and Schedule.

___ Name, organization, and contact information of Principal Investigator (PI) and any other senior leadership responsible for field safety.

___ Description of field Location. Ideally provide a map showing the field area and its proximity to medical facilities (i.e., a road map) and Global Positioning System (GPS) coordinates. If only air rescue is possible, this should be stated.

___ Environmental conditions expected at the field site (temperature and weather conditions average for the period the work will be performed).

___ General purpose of research (not for a science review but should outline the type of activities being performed in the field).

___ Identify specific hazards and risks of this activity and how they are mitigated.

___ Specify equipment to be used in the field. Identify any possible hazards involved with using this equipment.

___ Operational plan including dates of operations, and daily plan of activities.

___ Describe methods of transportation to be used to get around in the field.

___ Describe communication plan. How will intra-team communication be performed? What provisions are made to call in rescue (if needed). What equipment will be used for communication intra-team and externally?

___ Describe how navigation will be performed in the field. What equipment will be used to navigate (e.g., GPS, Compass, map)?

___ Describe required field team equipment.

___ Describe behavior/procedures to deal with weather extremes and first aid.

___ Describe how the field team will be briefed to ensure that they carry, and use required equipment or follow required procedures.

___ Provide the contact information and location of the nearest facilities to treat a medical emergency.

___ Describe plan for medical evacuation of an injured member.

___ A complete list of field team members along with their field experience and field-related expertise such as first aid training.

___ Describe how the PI will obtain and be ready to provide to Ames staff emergency contact information for each field team member sufficient to notify next of kin and obtain support in the event of a life-threatening emergency.