Procedures and Guidelines

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COMPLIANCE IS MANDATORY

Responsible Office: 500/Applied Engineering and Technology Directorate

Title: Applied Engineering and Technology Directorate Safety Program Plan

PREFACE

P.1 PURPOSE

This document provides the requirements for the Applied Engineering and Technology Directorate (AETD) safety program and documents the AETD safety policy. It is the policy of AETD to provide a safe and healthful work environment for all AETD personnel (civil servants and contractors). AETD facilities and work processes, shall at a minimum, meet all applicable federal, agency, and Center requirements.

P.2 APPLICABILITY

This applies to all AETD personnel and facilities and all personnel working within those facilities. For AETD contractors, it is applicable through contract clauses in conformance with NASA Procurement Regulation (Part 1, Subpart 52 and Part 14, Subpart 6).

P.3 AUTHORITY

NPD 8710.2, NASA Safety and Health Program Policy
NPR 8715.3, NASA General Safety Program Requirements
GPD 8715.1, Goddard Space Flight Center Safety Policy

P.4 REFERENCES

29 CFR 1900 to 1910, Occupational Safety and Health Administration
NPR 8621.1, NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping
NPR 8715.3, NASA General Safety Program Requirements
NASA-STD-8719.7, Facility Systems Safety Guidebook

P.5 CANCELLATION

500-PG-8715.1.1, basic

P.6 SAFETY

N/A

P.7 TRAINING

None

P.8 RECORDS

Record Title	Record Custodian	Retention
Mishap Lessons Learned	Code 250 Safety Office	10 years
Code 250 surveys (Industrial Hygiene, Process reviews, Annual Inspections, etc.)	Code 250 Safety Office	As required by the applicable office
Internal Audits/Reviews	Office conducting the audit/review	Three years
Formal Investigation of Mishaps and Close Calls	Division Office who's employees or facilities were involved	Three years
Facility Analysis	Branch Office	Life of the equipment

P.9 METRICS

The Directorate shall continuously determine the health of the AETD Safety Program by reviewing the following metrics obtained from the Divisions and the AETD Safety Risk Reporting Tracking (SRRT) System. Metrics shall include civil service and contractor personnel. The metrics shall be reviewed quarterly at an AETD Staff Meeting.

1. Injuries:
    a. Number of recordable injuries/illnesses and lost workday cases,
    b. Frequency and severity rates (See OSHA 1904, Recordkeeping and Reporting Occupational Injuries and Illnesses)
    c. Number of lost workdays
2. Mishaps/Lessons Learned
    a. Number of mishaps/close calls by type (A, B, C, D, or close call) (See NPR 8621.1, NASA Procedural Requirements for Mishap Reporting, Investigation, and Recordkeeping) identified per period
    b. Mishap/close calls corrective actions closed per month
3. Inspections:
    a. Average numbers of discrepancies by category as listed in SRRT
    b. Average number of findings are open for more than 30 days
    c. Instances in which work was stopped because of an inspection finding

d. List of items where funds were identified as needed to correct RAC 1, 2, or 3 problems, and length of time taken to provide those funds
e. List of RAC 1, 2, and 3 items pending work performed by groups other than owner (example: FMD work orders, RECERT work orders, etc.)
f. Number of inspections completed by division management and branch supervisors

4. Training
   a. Training required for employee vs. training completed
   b. Length of time for actions to be taken to bring employee training into compliance
5. Other metrics as created by the AETD Safety Council

P.10 DEFINITIONS/ACRONYMS

AETD	Applied Engineering and Technology Directorate
Critical	Results in loss of life, loss of or damage to flight hardware, or special high dollar items, one-of–a kind articles, or major facility components, whose loss would have serious programmatic or institutional impact
GDMS	Goddard Directives Management System
Hazardous	Materials or equipment that, if misused or mishandled, have a high potential to result in loss of life, serious injury to personnel, or damage to systems, equipment, or facilities.
IRIS	Incident Reporting Information System
PPE	Personal Protective Equipment
RAC	Risk Assessment Code. This is a number, which is assigned when looking at the frequency and severity of a subject. The lower the number the more hazardous the subject.
RAC 1	Imminent Danger. The situation is unacceptable and operations terminated and mitigation actions must be taken immediately.
RAC 2	Serious. The situation is unacceptable and corrective actions must be given priority to mitigate the hazard to an acceptable level. Operations should be shut down immediately and a risk mitigation plan developed.
RAC 3	Moderate. A corrective action plan should be developed, implemented, and tracked to rectify items.
RAC 4, 5, 6, 7	Minor. Items are low risk and should be corrected as part of the daily on-going operation.
SRRT	Safety Risk Reporting Tracking (AETD Safety web site found at “aetdsafety”)

PROCEDURES

In this document, a requirement is identified by "shall," a good practice by "should," permission by "may" or "can," expectation by "will," and descriptive material by "is."

1.0 Goals and Objectives

AETD's goals are to prevent work related injuries/illnesses, loss of facilities/equipment, and shut down of operations due to lack of compliance with Federal, NASA and GSFC safety requirements. To achieve these goals AETD shall meet the following objectives. AETD shall not compromise the safety and health of people, property or the environment.

- AETD Management (Deputy Director and/or Assistant Director) shall demonstrate leadership by:
  - Attending at least 80% of Center level safety related meetings and reporting results to the Director of and Division Chiefs (This item also includes the AETD Safety Manger)
  - Initiating/attending a minimum of three (3) lab area inspections per Division at least annually.
  - Maintaining a directorate level safety plan and manual, updating the documents a minimum of every two years.
  - Ensuring 100% of the significant close calls and mishaps are investigated, lessons learned are developed, and investigation findings within Code 500 jurisdiction are tracked through closure.
- Division Management (Division Chief, Associate Chiefs, or Assistant Chiefs) shall demonstrate leadership by:
  - Attending at least 75% of the Directorate's safety related meetings.
  - Ensuring supervisors complete/update 100% of their Task Safety Analysis (TSA)/Job Hazard Analysis (JHA) and, for hazardous operations, hazardous operating procedures within 90 days of identifying new or modified tasks/operations.
  - Attending lab area inspections within their division at least annually
  - Presenting the status of their safety programs; lessons learned, inspections findings, safety related issues, etc. to the Director of quarterly
  - Ensuring supervisors complete 100% of their quarterly area inspections
  - Ensure 100% of the lesson learned from mishaps/close calls are briefed to the Director of and the AETD Safety Council

2.0 Responsibilities

The AETD Director of shall:

- Have overall responsibility for the AETD Safety Program and hold management personnel accountable based in part on metrics provided.

- Provide oversight of the Safety Program and the AETD Safety Office, allocating adequate funds and ensuring sufficient qualified staffing for the AETD Safety Office

The Deputy Director of Planning and Development/Associate Director shall:

- Oversee the general functioning of the AETD Safety Program, assisting the Director of where necessary to ensure a proactive approach to safety
- Participate in the AETD Safety Council and the GSFC Safety Council
- Ensure the Divisions support both the GSFC and AETD Safety Programs
- Support each Division in correcting all safety issues affecting AETD, championing the funding of safety improvements needed to meet requirements within the Center budget process
- Oversee metrics (targets and performance indicators) for safety performance, and ensures appropriate dissemination and action where there are areas of deficiencies.

The AETD Safety Office shall:

- Advise management on Center and Federal level changes to safety standards/requirements
- Attend to the daily operations of the AETD Safety Program, providing a resource of safety information for the Divisions
- Provide a resource to help Divisions manage their safety programs
- Provide an interface and manage conflicts between Code 500 and other GSFC Directorates on safety issues
- Review mishap/close call reports for completeness and forward lessons learned to the appropriate GSFC groups, posting copies of safety reports on SRRT.
- Attend/support Center Level safety meetings and committees
- Participate in Division level meetings and inspections, as appropriate
- Audit Division safety programs to ensure consistency with Directorate safety requirements
- Maintain the data on the SRRT web site.
- Maintain the AETD Safety Council Charter (See Appendix A)

AETD Safety Council responsibilities are spelled out in Appendix A, AETD Safety Council Charter.

AETD Division Chiefs, Associate Chiefs, or Assistant Chiefs shall:

- Have overall responsibility for all operations and conditions in his/her responsible areas, ensuring all supervisors/branch heads understand their safety responsibilities, motivate their employees to participate in the Safety Program, and follow safe practices for operations.
- Develop/maintain division level addendums to the AETD Safety Manual, as applicable.
- Participate in and appoint a creditable and knowledgeable safety representative to the AETD Safety Council. (See Appendix A for additional explanation)

- Participate in lab area inspections on a random basis, visiting each branch's work areas at least once a year. Labs where risk of serious injury is high and frequent problems exist, inspections by Division Management should be more frequent.
- Provide Directorate management at least a quarterly briefing on, safety initiatives, high risk operations/equipment and mishaps/close calls with lessons learned, audit results, potential issues with other organizations, etc. Issues that have greater impact shall be briefed immediately.
- Ensure Risk Assessment Code (RAC) conditions/situations are corrected, and particularly RAC 1, 2 and 3 conditions. RAC 1 or 2 operations shall be discontinued immediately until mitigated to at least a RAC 3. For all RAC 3 and 4 operations, a risk mitigation plan shall be developed if the risk can not be corrected immediately, which implements an alternative means of accomplishing the task prior to continuing any work. RAC 3 issues shall be corrected within 30 days. (See Appendix C for determining RACs)
- Complete corrective actions identified in surveys, audits, mishaps, and inspections within 30 day of receipt of the report. Issues open longer than 30 days require an explanation to Directorate Management.

Branch Heads/Supervisors shall:

- Ensure all personnel follow applicable safety practices/standards (this includes personnel working on detail or in locations other than Code 500 operated, contractors and visitors) and have current training/certification for the work being performed and proper personal protective equipment. Supervisor should attend/audit training their personnel attend at least once to understand the safe practices employees are expected to follow.
- Review/approve all plans that mitigate risks to personnel from operations or equipment
- Immediately notify Division Chief of mishaps/close calls that are high visibility or result or could result in hospitalization or death, as well as completing the Center mishap reporting requirements
- Investigate all mishaps and close calls and where applicable, ensure lessons learned are distributed throughout the organization.
- Ensure results/verification or correction of inspections discrepancies, mishaps, surveys and audits are entered in SRRT
- At least quarterly participate in lab area inspections of high risk work areas. At least semiannually participate in medium risk lab area inspections. At least annually office areas participate in office and lower risk lab area inspection. Tracking completion of corrective actions using the SRRT. (Note: Quarters shall start from Jan 1 each year.) (See section 8.0 for more details on inspections)
- Ensure all personnel participate in the Safety Program in some manner (Examples of participation include serving on branch, division, or directorate level safety committees/councils, developing/reviewing and signing procedures and JHA, participating in area inspections, serving on mishap/close call investigation teams, providing safety related briefings, etc.)
- Ensure the AETD Safety Office is aware of all non-routine hazardous operations and equipment that may pose a RAC 1, 2, 3 or 4 hazard to employees.

- Track all safety related items that need additional funding for correction. Estimate of needed funds and requirements to be met shall be forwarded to Division Chiefs.
- Maintain a list of all hazardous operations within their jurisdiction, approving all hazardous operating procedures.
- Ensure hazard analysis and procedures are written/updated and approved for critical/hazardous operations

Division/Branch Safety Representatives' duties are listed in Appendix A, AETD Safety Council Charter.

Employees shall:

- Follow safety requirements when performing any task, keeping their workplace in a safe manner
- Attend all required safety-related training, ensuring certifications are current for all assigned work
- Participate in the AETD Safety Program in some manner (See section 4.0 for more details)
- Correct any unsafe situations/acts, if they have the knowledge and equipment to do so or report the situation to their supervisor and safety representative for correction
- Ensure their supervisor is informed of any additions or changes in work that increases the hazard level to themselves or others

3.0 Program Evaluation

Each quarter Divisions shall report required metrics listed in section as part of the quarterly Directorate Management briefing. Upward trends shall be explained and a plan provided to reverse the trend. Trends which show no improvement within a six month period shall also be explained. When problem areas are noted, the Deputy Director shall work with Division Chiefs to understand the problem and determine the best method of correction.

The Directorate Office shall perform periodic audits to verify the Program status. The AETD Safety Office shall audit Division inspection programs, internal audits, and mishap/survey closures. Results of the Safety Office audits shall be sent to the Deputy Director/Associate Director, highlighting the RAC 1, 2 or 3 problem areas found in the Divisions. Closeout of all identified discrepancies from all audits shall be tracked through closure. Closure should be completed within 30 days of receiving the report.

On a periodic basis, the program and this document shall be reviewed to determine changes required in the goals, objections or types of metrics kept. Where a change is necessary, it shall be coordinated with the Division Chiefs.

On at least a semi-annual basis, Divisions shall determine the health of their safety programs. A comparison of the metrics from audits/inspections and surveys shall be done to determine the lack of downward trends. Where trends are seen as high or climbing, a change in the program emphasis shall be made. Additionally, audits shall be performed of paperwork (procedures, plans, and/or training

documentation), observations, and employee interviews to determine an understanding of the applicable requirements. (Contact the AETD Safety Manager for assistance with audit checklists to ensure audits are thorough). Written results shall be entered in SRRT. All noncompliant items or uncontrolled hazards found shall be analyzed for risk using the RAC system. (See Appendix C.) RAC 1 or 2 operations shall be discontinued immediately until corrected. For all RAC 3 and 4 operations, a risk mitigation plan shall be developed, which implements an alternative means of accomplishing the task prior to continuing any work. RAC 3 issues must be correct within 30 days. RACs 4 or higher will be corrected as time permits. Non-compliance findings should be corrected within 30 days.

a. On an annual basis, an authorized employee shall review the Division's Lockout/Tagout Program as required by OSHA 1910.147.
b. The Division Safety Representative or employee trained in the program requirements should review at least four of the following areas per year. Different topics should be chosen each year's such that all applicable areas are covered at least every three years.

- Confined Space Entry Program
- Hazard Communication Program (MSDS and knowledge of personnel of the program)
- Hazardous Chemical Storage Program
- Hazardous Waste program
- Personnel Protective Equipment (hazard assessments, equipment selection, use, maintenance, training)
- Safety Training Program
- Electrical Safety Program
- Respiratory Protection Program
- Hearing Conservation Program

4.0 Employee Involvement

Employees (both civil servant and contractor) shall actively participate in the program bi-monthly, taking part in at least one of the following activities.

a. Member of the Division/Branch Safety committee
b. Development/review of procedures/ safety related documents (safety manual, Job Hazard Analysis (JHA), safety plans, etc.)
c. Development/review of safety training courses or attending safety training
d. Giving safety talks at other meetings
e. Actively cleaning up work areas
f. Inspecting areas to identify and correct safety concerns

5.0 Contractor Oversight

Divisions/each branch shall ensure contractor personnel comply with Directorate safety requirements and participate in the program. Participation can include any of the items listed under Employee Involvement or other means suggested. Contractors shall notify the Division/Branch of its company's

safety plan and how it plans to ensure employees following GSFC and AETD safety requirements, including properly training their employees for the task being performed. Contractors shall supply proof of training to the COTR for forwarding to branch heads, upon request.

6.0 Workplace Analysis

Systems safety techniques, including FMEA, OHA, or similar techniques, shall be used to identify new and existing hazards in processes and equipment. Facilities that interface with test hardware should be analyzed to verify no hazards are introduced to personnel working on or near the systems and to hardware being tested. All residual hazards shall be assigned a RAC. The Deputy Director and AETD Safety Office shall be notified prior to the purchase of operations/equipment/materials that might be a RAC 1 or 2. Any hazard with a RAC of 1 or 2 shall require the **operation or equipment to be shut down immediately until the hazard is controlled and accepted by the Assistant Director for Safety and Security**. When a stop work situation exits, all ways to mitigate the risk in a cost-effective way shall be explored and a plan presented to the Director of.

The plan should indicate the Assistant Director for Safety and Security shall make the determination as to the continuance of work or not based on the facts. Analysis indicating RACs other than 1 or 2 shall be approved by the applicable branch head. Any RAC of 3 or 4 should have controls in place within 30 days. Higher RACs should be worked as time and materials permit. When facilities are modified, the analysis shall be updated to ensure additional hazards are not introduced to the system. As open items are closed, backup data shall be provide and kept as part of the analysis package.

Appendix B lists the hazardous operations associated with the Directorate. Job Hazard Analysis (JHA) or Task Safety Analysis (TSA) shall be preformed for all hazardous operations to verify proper controls are in identified and procedures developed, per the requirements of NPR 8715.3. Operations involving hazardous chemicals shall be reviewed to determine if a less hazardous material or smaller quantity can be used. When chemicals are used in a laboratory setting a Process Hazard Analysis (PHA) shall be performed per GPR 1700.2, Chemical Hygiene Program as part of the written Chemical Hygiene Program.

7.0 Mishap Investigation

Mishaps and close calls shall be investigated and reported per the requirements of NPR 8621.1, NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping, unless agreed by Directorate Management it is unwarranted. NASA Incident Reporting Information System (IRIS) shall be completed on the Code 250 web site (http://safety1st.gsfc.nasa.gov/) The Directorate Office and AETD Safety Manager shall be notified by email or phone. For any level mishap/close call, the Director of or Division Chief can appoint a team to determine the root cause(s). Generally for Type C (less than $250,000 damage and/or lost work day cases) or D (less than $25,000 damage and/or OSHA recordable injury) mishaps and close calls, the area supervisor shall be responsible for the investigation. A team, which may be two or more people, including a representative from the group with the mishap, should determine the root cause(s). Mishap/close call lessons learned shall be presented at the Quarterly Division Safety briefings and at AETD Safety Council. The final

report shall be posted on the SRRT. Corrective actions shall be tracked through the SRRT until closed. For Type A or B mishaps (greater $250,000 and/or hospitalization of personnel) a formal review board shall be appointed per the requirements of NPR 8621.1 by the Center Director or Headquarters. All type A, B, or C mishaps or high visibility D or close calls shall immediately be reported to the Deputy Director or Associate Director.

8.0 Area Inspections

Each branch/division shall establish an inspection program of their work areas, which will identify area hazards and track closure of the hazards. Laboratories shall be classified as high, medium or low risk. Low risk shall include area such as computer labs (no solvents or mechanical systems that can present risk to personnel). Medium risk areas shall include those with small amounts of solvents, soldering ,etc. High risk areas are those with systems/operations that can cause severe harm to personnel or facilities and have hazardous materials in amounts that can cause harm. High risk and medium lab areas shall be inspected at least quarterly and low risk and office areas shall be inspected annually by personnel trained on hazard recognition. Records shall be kept as to the status of the inspection and closure in the SRRT. The inspection program should rotate participants, so that all employees and supervisors take part in the program. Metrics are developed to make sure trends are identified. Where trends indicate problems exist, the safety program emphasis shall be modified.

9.0 Employees Reports of Hazards

Hazards reported by employees shall be documented and tracked in the SRRT. On a quarterly basis, each branch should review the list of reports and time for corrective action. Those taking over 30 days should be investigated to determine what caused the delay and any corrective action needed to prevent future delays. Once corrected the employee shall be notified of the action taken. Trends should be reviewed to determine areas of concern.

10.0 Hazard Prevention and Control.

In order to ensure hazards are properly identified and controlled, divisions/branches have a safety representative(s). In some instances, a Branch level employee may be made available to help ensure the safety of personnel and operations. The Division level person shall be a member of the AETD Safety Council. (See Appendix A for the duties and responsibilities of the Division/Branch Safety Representatives) Where questions exist, he/she shall contact the AETD Safety Office for guidance. Safety Representatives shall attend additional training, as necessary, to ensure they understand the safety requirements of the jobs being performed.

Engineering controls shall be implemented where feasible. PPE shall be used during the implementation of engineering controls or where engineering controls are not feasible. Branches shall identify the types of PPE needed for the work performed and maintain an adequate supply of PPE for the hazards personnel are exposed to. PPE shall only be used when engineering controls are not in place, not as a substitute of engineering controls.

Workplace hazards that require funding over the funding available to the Division shall be reported to the Deputy Director for presentation at higher levels. The Deputy Director, depending on the level of severity, may raise the issue to the appropriate Center official, and if necessary, to the Center Director level.

In order to ensure personnel have access to proper information on the general safety requirements, the Directorate Safety Manual shall be available on GDMS. When divisions need additional clarification on safety issues within their operations/facilities, an addendum shall be written. This manual shall discuss the types of hazards found in the work areas, resources for obtaining more information, processing waivers specific to those facilities, use of the buddy system, etc. To ensure it is current it shall be reviewed every two years and updated as necessary.

Each building on GSFC has appointed fire and floor wardens to respond in the event of an emergency situation. The Division personnel appointed to these positions shall follow the guidance of the GSFC Incident Commander as stated in the Building Emergency Action Plans.

Certain types of jobs required medical examinations. The Division shall ensure all personnel having to wear respirators, operate cranes or forklifts, work around Class IIIB or IV lasers, etc. are medically qualified prior to use of the equipment. The Safety Manual generally states which types of work require medical evaluations.

Where critical systems, such as oxygen monitoring, exist, a maintenance program shall be established. This system shall be reviewed annually to ensure it is function properly. At no time shall a critical system be allowed to stay in a non-functioning state without a mitigation plan in affect.

11.0 Training

Personnel performing work, which is hazardous or requires training per a standard or regulation, shall have training prior to being assigned to the task. Figure 11-1 lists the minimum requirements. All managers/supervisors should audit the training their employees are required to attend to ensure they understand the safety requirements needed for safe operation.

Each Branch maintains a list of the training required for their personnel and the date it expires. Supervisors shall ensure certifications remain current. The "Safetrain" web site can be used as an aid to determine required employee training and to track civil service personnel training due dates.

Figure 11-1. Training Matrix

TRAINING TYPE	FREQUENCY OF TRAINING	TYPES OF JOBS REQUIRING TRAINING
Aerial Lift	Annually	Aerial lift operators
Asbestos Awareness	Prior to working on equipment/facilities that may contain asbestos	All maintenance, crane inspection/maintenance, and custodial employees
Compressed Gas Safety	4 years	Personnel working with pressurized gas cylinders or systems over 30 psi
Confined Space Entry	4 years	Personnel entering confined spaces or are attendants for confined spaces
CPR	Annually	Personnel required to perform CPR
Crane/Rigging	Annually	Personnel required to operate cranes or perform rigging
Cryogenic Safety	4 years	Personnel working with or near cryogenic liquids
Electrical Safety	4 years	Personnel and their supervisors that work with 50 volts or higher where there is a hazard, welders, electricians and electrical engineers
Emergency Evacuation, includes a review of building plans, how to find updates, emergency response	Annually	All Personnel
Explosive Handlers	4 years	Personnel working with ordnance
Fall Protection	1 year	Personnel working with harnesses and lanyards
Fire Extinguisher	1 year	Personnel work as a fire watch during welding operations and when required to use on for emergency situations
Fire/Floor Wardens	Annually	Personnel appointed as fire/floor wardens
First Aid	3 years	Personnel required to perform first aid
Forklift	Annually	Forklift operators
Hazard Communication	At beginning of employment, prior to assignment and when new hazards are introduced	All Personnel must have an awareness of the requirements. If working with or near hazardous chemicals must have formal training
Hazardous Waste Management	Annually	All employees who use chemicals or dispose of any material that could be considered hazardous
Hearing Conservation	Annually	Personnel working in area where the noise is

TRAINING TYPE	FREQUENCY OF TRAINING	TYPES OF JOBS REQUIRING TRAINING
		over 80 dbA
Inspection Criteria	Prior to performing the inspections	Any employee performing inspections
Integrated Contingency Plan	Annually	Personnel handling storage of 55 gallons or more of oils
Laboratory Safety	3 years	Personnel working in chemical laboratories
Laser (Class IIIB, and IV)	Prior to use	Personnel working with or near Class IIIB or IV lasers
Lockout/Tagout/ Blockout for Affected Personnel	4 years	Personnel who operate equipment that may have to be locked or tagged out
Lockout/Tagout/ Blockout for Authorized Personnel	4 years	Personnel working on equipment where there can be a release of hazardous energy
Mishap Investigation	Prior to conducting a mishap investigation	Managers, supervisors or employees leading a mishap team
Personal Protective Equipment (PPE)	Prior to assignment	All personnel required to wear PPE
Respiratory Protection	Annually	Personnel using respirators
Scaffold Erection Safety	4 years	Personnel erecting or working on scaffolding

Appendix A
AETD Safety Council Charter

1. **Mission Statement:** AETD will run a world-class safety program that will set an example for the Goddard Space Flight Center. The AETD Safety Council will make this happen.
2. **Goals:** The Safety Council will reduce and then keep workplace safety risks to lowest level possible, and ensure AETD is in compliance with safety regulations and requirements. .
3. **Objectives**. The Safety Council will ensure direct participation by Division leadership, status the health of the AETD Safety Program by examining (and if necessary improving) SRRT metrics, take corrective actions, and disseminate safety related information; it will annually determine how the Safety program can be improve and make those improvements. It will determine what additional funding is needed, and what needs to be done to ensure the best in AETD are involved in workplace safety.
4. **Data Review/Analysis:** Safety data reviewed at the meetings shall include reports of open action items, trend analysis (accidents, employee concerns report, ergonomic, inspection/audit findings, etc.), new and changed safety requirements and policies, lessons learned, and other mishaps or safety related issues.
5. **Presentation to the Director Of:** The Safety Council will ensure that each division is ready to brief the Director of AETD on a quarterly basis and, at a minimum, can describe and prioritize current risks, action plans, accomplishments and needs and discuss all lessons learned from mishaps.
6. **Membership Guidelines:** The Division Chief or the Division leader who is designated to speak for the division, and an employee representative who champions safety causes, shall represent each Division on the Council. As such the duties of the members are:
   A. Monitor safety performance using SRRT data, assess where the highest risks are, and implement action plans to eliminate or reduce those risks.
   B. Disseminate safety related information to each division as needed
   C. On an annual basis, determine what changes need to be made to the Safety Program to maintain its good health.
   D. Provide safety program coordination among the Code 500 Divisions and offices
   E. Share lessons learned, positive and negative, and best practices to enhance overall AETD safety performance.
   F. Ensure supervisors understand their safety responsibilities.
   G. Inspire management, supervisors, employees, and contractors to improve safety performance for the next generation.
   H. Assign the duties of the Division/Branch Safety representatives, which as a minimum shall be:
      a. Attend all required safety related training applicable to the operations performed in their area of responsibility
      b. Review and approve hazardous operating procedures
      c. Ensure that area inspections are performed and that employees are correcting deficiencies on a timely basis, and at least quarterly, personally attend the inspections to determine if they are being conducted as required.
      d. Recommend controls to assure safe performance of all work performed

e. Disseminate safety related information to Branch personnel.
f. Maintain chemical inventories on MSDSpro
g. Help define branch training requirements and ensure that employees are trained
h. Ensure personnel have proper personal protective equipment (PPE)
i. Help in the development of appropriate Task Hazard Analysis (TSA) or Job Hazard Analysis (JHA) for all work being performed
j. Ensure hazardous operations have written procedures compliant with requirements in NPR 8715.3.
k. Collate metrics for submission to the AETD Safety Office; and finally
l. Carefully consider any need for additional procurement or FTE funding, and forward it to the Division heads or, if needed, to the Directorate

7. **Chair:** The Deputy Director of Planning and Development and AETD Safety Manager shall co-chair the meeting.
8. **Attendance Requirements:** Members are required to attend at least 75% of the meetings; if they cannot attend, they will delegate a competent person to represent them and ensure they are fully briefed.
9. **Meeting Schedule:** The Safety Council should hold meetings at least once a month.
10. **Quorum Rules:** Minimum of 75% attendance of the Division Management to hold a meeting.
11. **Meeting Minutes Contents:**

- Members and visitors in attendance
- Recording individual
- Minutes shall be distributed to all members
- List of action items
- Status of action items (due date, open, closed, delayed, in progress, etc.)
- Name of individual who is responsible for completing each action item

Minutes are mailed to all meeting participants.

Appendix B
Potentially Hazardous Operations List

The following is a list of identified potentially hazardous operations associated with AETD operations. Changes to this list will be made as other operations are identified or as the potential risk is reduced. This list in not meant to be all inclusive, but a general overview at one point in time.

Code					Type of Operation
540	550	560	580	590	
X					Centrifuge operations
X	X			X	Confined space entry
X	X			X	Crane operation, both critical and noncritical
X	X	X			Cryogenic fluid handling
X					Diving
		X			High Energy Storage (Batteries)
X				X	High noise areas
		X			Ionizing radiation
X	X	X		X	High pressure gas and hydraulic operations, test and inspection
X	X	X			Electrical repair, troubleshooting, and fabrication/assembly greater than 50 Volts
X	X				Laser operation, Class IIIb and IV
X	X	X		X	Lockout/tagout operations
X					Mobile Aerial Platform operations and maintenance
X	X	X		X	Non-ionizing radiation (high intensity white light, UV, RF or IR)
X	X	X			Possible oxygen deficient areas
X					Powered Industrial Trucks
X					Work at heights
X	X	X		X	Hazardous chemical (health, flammability or reactivity hazards of 3 or 4)
X	X			X	Unguarded rotating equipment and machinery
X	X			X	Welding
X				X	Ordnance

Appendix C
Risk Assessment Codes

The Risk Assessment Code (RAC) is a numerical expression of comparative risk determined by an evaluation of both the potential severity of a condition and the potential probability of its occurrence. RAC's are assigned a number from 1 to 7 in a risk matrix. The RAC number serves as a means to prioritize corrective actions.

Severity is an assessment of the worst potential consequence, defined by degree of injury or property damage, which could occur. The severity classifications are defined as follows:

Class I – Catastrophic – A condition that may cause death or permanently disabling injury, facility destruction on the ground, or loss of crew, major systems, or vehicle during the mission.

Class II – Critical – A condition that may cause severe injury or occupational illness, or major property damage to facilities, systems, equipment or flight hardware.

Class III – Moderate – A condition that may cause minor injury or occupational illness, or minor property damage to facilities, systems, equipment, or flight hardware.

Class IV – Negligible – A condition that may cause the need for minor first aid treatment though would not adversely affect personal safety or health. A condition that subjects facilities, equipment, or flight hardware to more than normal wear and tear.

Probability is the likelihood that an identified hazard will result in a mishap, based on an assessment of such factors as location, exposure in terms of cycles or hours of operations, and affected population. The following is an example of Probability Estimation:

A – Likely to occur immediately
B – Probably will occur in time
C - May occur in time
D – Unlikely to occur
E – Improbable to occur

Risk Assessment Code Matrix

	Probability Estimate				
Severity Class	**A**	**B**	**C**	**D**	**E**
I	**1**	**1**	**2**	**3**	**4**
II	**1**	**2**	**3**	**4**	**5**
III	**2**	**3**	**4**	**5**	**6**
IV	**3**	**4**	**5**	**6**	**7**

CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	11/25/2005	Initial Release
A	03/27/2007	General editorial changes throughout, update of matrix, made goals and objective measurable, and updating requirements for communicating mishap/close call lessons learned. Deleted Appendix A, Inspection/Audit Tracking Form.