



NOAA OPERATIONAL RISK MANAGEMENT (NRM) PROCEDURES

1. Purpose.

Establish NOAA's Risk Management (NRM) as an integral part of all National Oceanic Atmospheric Administration (NOAA) operations, training and planning in order to optimize operational capability, research, and enhance mission accomplishment.

2. Background

- a. Uncertainty and risk are inherent in the nature of NOAA's mission. Our success is based upon a willingness to balance risk with opportunity in taking a decisive action necessary to accomplish our tasks. At the same time, supervisors have a fundamental responsibility to safeguard highly valued personnel and material resources, and to accept only the minimal level of risk necessary to accomplish an assigned task.
- b. NRM is an effective tool for minimizing or eliminating injuries and reducing property loss. NRM applied in both day-to-day operations and during crisis periods, has produced dramatic results in reducing these losses. This procedure helps to integrate this effective technique throughout NOAA. It provides a means to help define risk and control it where possible, thereby assisting the supervisor in choosing the best course of action and optimizing our successes.
- c. All NOAA tasks, involve risk. Therefore, every operation requires some degree of risk assessment and risk management decision. The NRM program develops an environment where every NOAA employee, from senior leaders to newly hired/assigned personnel are trained and motivated, to personally manage risk. This level of systematic management of risk will help ensure all operations are completed with minimum risk acceptance.

3. Scope.

This procedure applies to all NOAA activities and personnel.

4. Discussion.

NOAA Operational Risk Management (NRM) is a decision making process that enhances overall operational capability. NRM and assessment are essential tools of operational planning. NRM provides the tools to the decision maker's needs to make sound decisions. The NRM program helps the decision maker identify hazards, assess risks, and implement controls to reduce the risks associated with any operation. Implementation of NRM is accomplished as follows:

- a. NRM is included in the orientation, and training of all NOAA personnel (including contractors, and volunteers), and is tracked by the annual online safety awareness training program. Level of training is commensurate with the associated risk. Training enables employees to recognize unsafe/unhealthy working conditions, and practices in the workplace. Supervisors will utilize NRM procedures during



inspections of their work areas to identify potential hazards and risks to employees. Once identified, these hazards can be eliminated which will contribute to reducing the overall NOAA accident/mishap rate.

- (1) NRM training is incorporated into all leadership courses, and general safety training courses (e.g., DuPont Senior Leadership Training, Supervisor Training, and Test, and the General Safety Awareness Training, etc.).
- (2) The NRM process and its specific applications are integrated into NOAA training, with specific emphasis on training, which involves ships or small boats, aircraft, diving, firearms, hazardous chemical handling, working alone, driving, high voltage electrical, sea buoy operations, and other high-risk operations.

b. NRM lessons learned from near misses, accidents or incidents are submitted by each Line and Staff Office to the NOAA Safety and Environmental Compliance Officer (SECO) for inclusion in an NRM web page, as sharing this information could be of significant benefit to other NOAA employees.

c. The NRM process is integrated into all levels of NOAA Operations as listed below:

(1) Hazards shall be identified, risks assessed, and controls developed and implemented during the earliest possible planning stages, and throughout the operational stages. Charges are continually monitored for effectiveness of controls, and situational changes.

(2) When practical, each manager, supervisor, or team lead will review NOAA's existing NRM lessons learned web page, and/or consult with a safety professional prior to acceptance of risk.

(3) Controlling workplace hazards shall be through the following:

- substitution
- isolation
- operating procedures
- purchasing procedures
- interim hazard abatement measures
- permanent hazard abatement measures

(4) Hazard control recommendations shall be developed, and define possible actions that should be considered when recommendations are developed for the prevention or reduction of hazards. This includes, but is not limited to, engineering designs, isolating hazardous substances, monitoring exposures, and training.

(5) NOAA has developed risk management models, as shown in the NRM training Cheat Sheet, to be used with the Risk Management Worksheet.

- Risk Assessment Code (RAC)
- The 5 M Model
- The six step method
- Order of Precedence
- The Involvement Continuum
- Hazards are caused by Energy
- Macro Control Options List
- Risk Control Options Matrix
- The Power of Command
- Seven Primary Hazard ID Tools



(6) The Green, Amber, Red (GAR Model) has six checklist factors to consider when assessing risk used for small boats, and aviation.

- supervision
- employee fitness
- planning
- environmental
- employee selection
- event complexity

Each factor is scored on a scale of 1 – 10 with one being slight or no risk and ten being the highest level of risk.

Every employee, contractor, volunteer, and guest is required to complete a risk assessment training in one of the four categories; take the NOAA Risk Management instructor led training course, and it is also part of the Safety Awareness Training, Safety Training for Supervisors and Test, and The DuPont Safety Plus for Senior Leaders.

Similar to a traffic light

Green means okay to proceed

Amber (or yellow) means proceed with caution

Red means stop (and consider the situation before moving ahead).

5. Action

All NOAA operations apply the principles of NRM in planning, operations, and training. The NRM process applied to optimize operational effectiveness, and capabilities. NRM decisions are made by the managers, supervisors and team leads directly responsible for the operation. Prudence, experience, judgment, intuition, and situational awareness are critical elements in making effective risk management decisions. When the managers, supervisors, and team leads are responsible for executing a task determines that the risk associated with that procedure, cannot be controlled at his/her level, or goes beyond senior management’s stated intent, he/she shall elevate the decision through the next level or management.

6. Responsibilities

1. NOAA Line/Staff Offices shall provide NRM training to all employees, contractors, and/or volunteers.

2. Safety and Environmental Compliance Office (SECO):

(1) Develops general curricula for NRM training to include the six-step approach:

- 1) Identify hazard
- 2) Assess the risk
- 3) Analyze risk
- 4) Make control decisions, and establish control measure
- 5) Implement risk controls
- 6) Supervise and review

(2) Recommends appropriate modifications to NOAA administrative orders based on job safety/hazard analyze (JSA and/or JHA) to ensure NRM is efficiently integrated into all NOAA operations.



- (3) Integrates NRM Hazard Severity and Probability Categories into existing training conducted by SECO employees.
- (4) Serves as technical advisors on NRM site or operation specific training curricula developed by each Line and Staff Office.
- (5) Ensures NRM concepts and applications are addressed in appropriate NOAA publications.
- (6) Provides Line/Staff Offices with information, data, and technical support to help reduce potential hazards identified via the NRM process.
- (7) Provides quarterly NRM excerpts from incident reports to the NOAA Safety Council.

3. Line Office(s) and Staff Office(s) shall:

- (1) Based on senior management guidance develops curricula for and incorporate appropriate NRM instructions at each level of training and on all courses where safety and health issues should be appropriately addressed.
- (2) Implements the NRM process within their respective Line and Staff Office. Examples include, but not limited to:
 - 1) Providing training to Line and Staff Office personnel on NRM
 - 2) Incorporating identified hazards, risk assessments, and controls into briefs, notices, and written plans
 - 3) Conducting a thorough risk assessment for all new or complex tasks, defining acceptable risk, and possible contingencies for the evolution
- (3) Includes NRM concepts and applications in appropriate Line and Staff Office publications.
- (4) Submits NRM process and lessons learned reports to the SECO. Reports should comment on hazards, risk assessments and effectiveness of controls implemented.
- (5) Line/Staff Offices will inform the SECO and the NOAA Safety Council of hazards, which cannot be controlled, or mitigated at their facilities.

7. **References**

Occupational Safety and Health: <http://www.osha.gov>

A publication of Office of Marine and Aviation Operations

National Oceanic and Atmospheric Administration: <http://www.seco.noaa.gov/Safety/ORM.htm>



U.S. Department of Commerce:

http://hr.commerce.gov/s/groups/public/@doc/@cfoasa/@ohrm/documents/content/dev01_006463.pdf.doc.gov/

Air Force: [SWI 90-901, OPERATIONAL RISK MANAGEMENT \(ORM\) PROGRAM](#)

Air Force: SWI 90-901 [OPERATIONAL RISK MANAGEMENT \(ORM\) INTEGRATION AND SUSTAINMENT PLAN \(ISP\)](#)

NASA: NHB 1700.1 (V1-B), *NASA Safety Policy and Requirements Document, 1993:*

<http://nodis.hq.nasa.gov/Library/Directives/NASA-WIDE/Procedures/contents.html>

OPNAVINST 3500.39, *Introduction To Operational Risk Management*

Army Safety Center: <http://safety.army.mil/home.html>

Naval Safety Center [Operational Risk Management Training](#)

Army Risk Management Information Center: <http://rmis.army.mil/>

Air Force Safety Center: <http://rmis.saia.af.mil/>

Air Force ORM Pubs:

AFI 91-213, Operational Risk Management (ORM) Program

AFPAM 91-214, Operational Risk Management (ORM) Implementation and Execution

AFPAM 91-215, Operational Risk Management (ORM) Guidelines and Tools:

<http://afftc.edwards.af.mil/pim/afmenu/91series.htm>

NASA Continuous Risk Management:

http://satc.gsfc.nasa.gov/support/ASM_FEB99/crm_at_nasa.html

Navy Safety Center/ORM:

<http://www.safetycenter.navy.mil/ORM/orrmain.htm>

USMC ORM:

<http://www.hqmc.usmc.mil>

<http://www.hqmc.usmc.mil/safety.nsf/852564750060e4c88525645d006f6979/fd7ddc822da34c0f852564290069ba99?OpenDocument>