



**Sandia National Laboratories, California**

# **Environmental Aspects, Objective and Targets Process**

**EFCOG Semi-Annual Meeting 10/07**



Sandia is a multi program laboratory operated by Sandia Corporation, a Lockheed Martin Company,  
for the United States Department of Energy under contract DE-AC04-94AL85000.





# Definitions

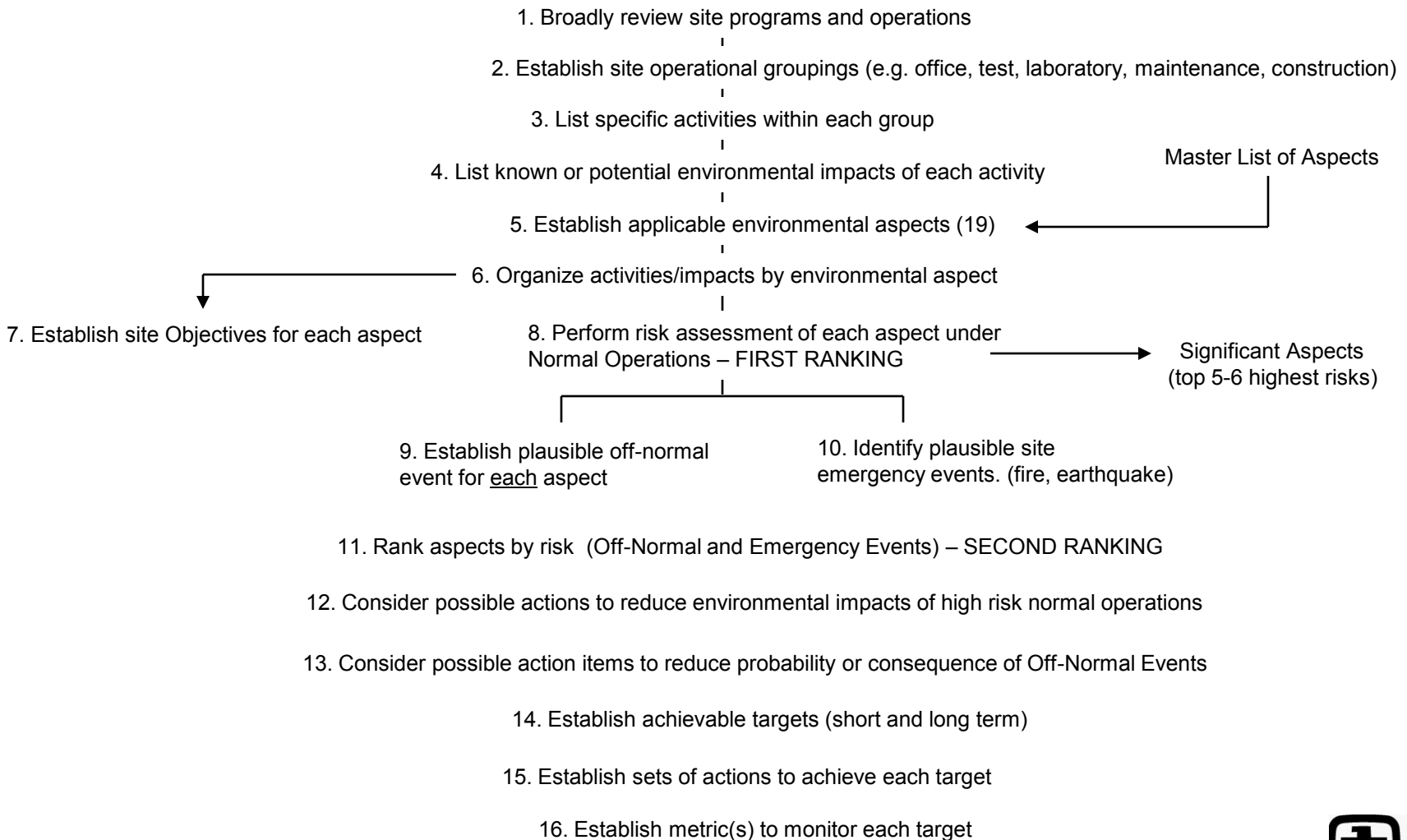
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**Aspect**: pathway for environmental impact (positive or negative).

**Objective**: generally stated goal for an aspect. Usually does not change. (e.g. “Minimize site water consumption.”)

**Target**: Specific, measurable desired condition to achieve or support an objective. Either maintain steady state or achieve a change.

# Process





# Aspects

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## Significant (Normal)

- Water Discharges
- Air Emissions
- Land Use
- Material Procurement and Use
- Hazardous Material
- Universal Waste

## Significant (Off Normal)

- Biological Agents
- Hazardous Material Transport
- Radioactive and Mixed Waste
- Legacy Asbestos
- Seismic Event

## Other

- Contaminated Sites
- Hazardous Waste
- General Transportation
- Solid Waste
- Radiological Material
- Natural Gas Use
- Electricity Use
- Water Use

# Aspects Risk – Normal

**ASPECT: Hazardous Transportation (onsite and offsite) - Normal Operations**

Environmental Impact		Risks of Impact						Total Risks	Risk Score
		Environmental Damage	Safety and Health	Programmatic Impact	Compliance	Financial liability or cost	Negative Reputation or Publicity		
Contamination of air		1	0	0	0	0	0	1	1
Contamination of ground water or surface water		0	0	0	0	0	0	0	0
Contamination of soil		0	0	0	0	0	0	0	0
Contamination of facilities (building or equipment)		0	0	0	0	0	0	0	0
Offsite disposal (landfill or long term storage)		0	0	0	0	0	0	0	0
Exposure to workforce		0	0	0	0	0	0	0	0
Exposure to public		0	0	0	1	1	0	2	2
Effect on Wildlife or Habitat		0	0	0	0	0	0	0	0

3
Probability Adjustment (multiplier)
1
Total Score
3

Risks	Value	Prob. Mult.
Negligible	0	1
low	1	+/- 10%
medium	2	+/- 20%
high	3	+/- 30%

Probability Adjustment from Prior Year	degree of change	multiplier
Loss of funding		0
Loss of resources		0
Loss of knowledge		0
Increase level of activity		0
Increase in funding		0
Increase in resources		0
Increase in knowledge		0
Decrease in activity		0

# Aspects Risk – Off Normal

**ASPECT: Hazardous Transportation (onsite and offsite) - Off Normal**

Environmental Impact	Off Normal Event Probability	Risks of Impact							Risk Score
		Environmental Damage	Safety and Health	Programmatic Impact	Compliance	Financial liability or cost	Negative Reputation or Publicity	Total Risks	
Contamination of air	1	1	2	0	1	0	0	4	4
Contamination of ground water or surface water	1	2	1	0	2	1	1	7	7
Contamination of soil	1	2	0	0	2	2	1	7	7
Contamination of facilities (building or equipment)	1	1	0	1	1	2	0	5	5
Offsite disposal (landfill or long term storage)	1	0	0	0	0	1	0	1	1
Exposure to workforce	1	0	3	2	3	3	3	14	14
Exposure to public	1	0	0	0	0	0	0	0	0
Effect on Wildlife or Habitat	1	2	0	0	1	1	1	5	5
									43

Probability		Value
zero or N/A	0	0
low	<20%	1
medium	20-50%	2
high	50-80%	3
very high	>80%	4

Risks		Value
Negligable		0
low		1
medium		2
high		3

**Off Normal Scenario:** Gasoline tanker ruptures, spills and ignites on site while making a delivery.



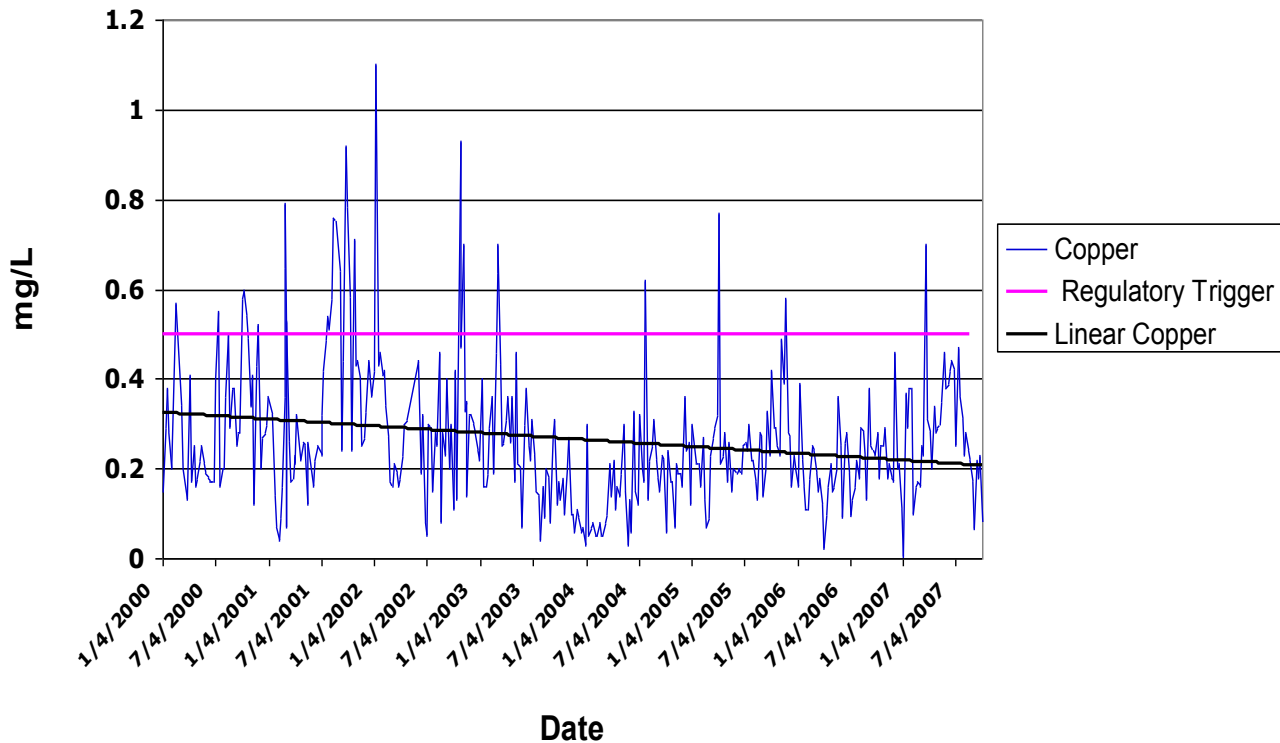
# Targets –

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- **Not all objectives will have targets**
- **Targets developed for EMS management in addition to those addressing reduction in environmental impacts**
- **We make sure they are stretch but achievable.**
- **We purposely try to establish targets that are interim for those long term targets.**
  - **Keeps the effort going / no procrastination**
- **Targets based not only on where we are going but acknowledge where we are currently.**
- **Contain specific timeframes (short and long term)**
- **Stated in numerical terms – top management requirement (not just % changes)**

# Metric - Example

## Copper in Sanitary Sewer



### Objective:

Minimize the volume and contamination of sewer water.

### Target:

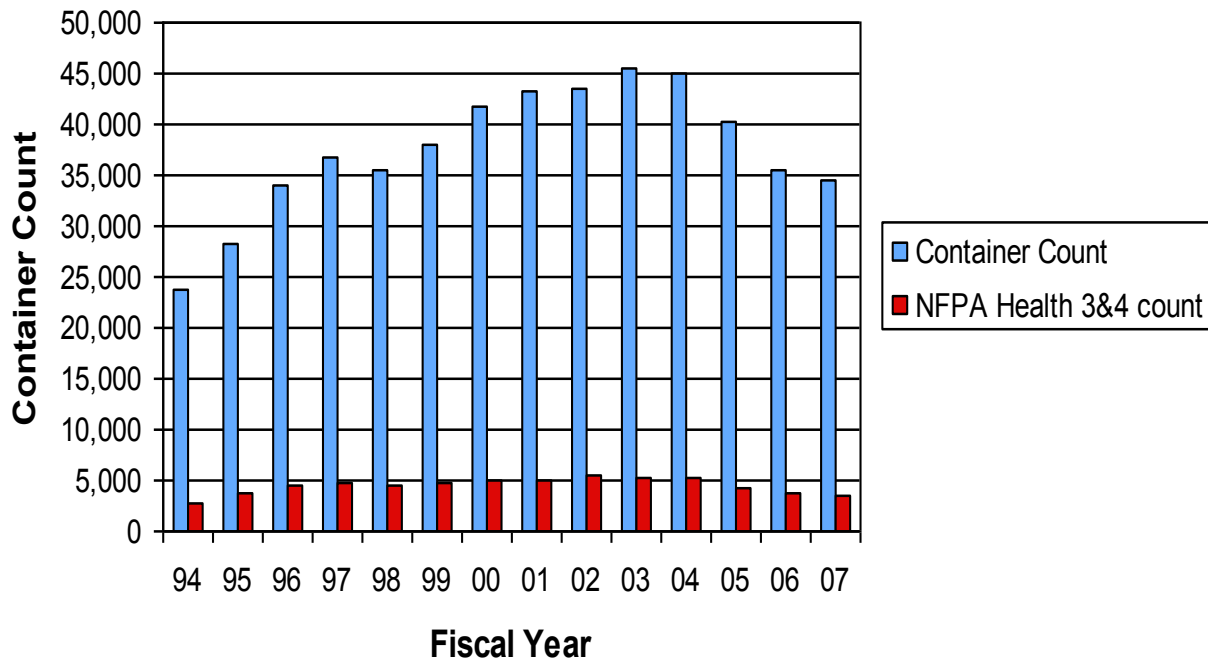
Maintain average weekly composite Zinc and Copper concentrations in sewer effluent below the 50% regulatory trigger level. (.5 mg/L Cu and 1.5 mg/L Zn)

### Action:

Install centrifugal separators for cooling tower basin water processing.

# Metric - Example

SNL/CA Hazardous Material Inventory Container Count



**Objective:**

Minimize the use of hazardous material.

**Target:**

In FY07 reduce hazardous material inventory of NFPA health hazard rated 3&4 materials by 20% from the Oct. 1, 2006 baseline.

**Target :**

In FY08 reduce the site gas cylinder inventory by 10%, based on the container count, from the Oct 1, 2007 baseline. (from 1856 to 1670 cylinders)