ADDENDUM II

Idaho Chemical Processing Plant
Storm Water Pollution Prevention Plan For
Construction Activities

CONTENTS

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1. INTRODUCTION

This is a facility-specific storm water pollution prevention plan for construction activities (SWPPP-CA) at the Idaho Chemical Processing Plant (ICPP). This facility SWPPP-CA provides information about ICPP. This is an addendum to the Idaho National Engineering and Environmental Laboratory (INEEL) SWPPP-CA—Generic Plan (DOE/ID-10425). The Generic Plan provides information and requirements common to the INEEL. This facility SWPPP-CA is intended to be used in conjunction with the Generic Plan. There is also an INEEL SWPPP for Industrial Activities (SWPPP-IA), which provides requirements for industrial activities, maintenance actions, and existing storm water controls.

2. FACILITY EVALUATION

The ICPP is located approximately 50 miles from Idaho Falls. The original facilities at the ICPP were built in the 1950s, and they have been modified over the years to fit the changing needs of the Department of Energy (DOE). The ICPP's original mission was to receive, store, and reprocess spent nuclear fuel from test and research reactors in the United States and foreign countries and from the U. S. Navy's ship propulsion reactors. In 1992, the ICPP's mission was changed to receive and store spent fuel and prepare it for final disposition.

2.1 Site Information

The ICPP is located on alluvial materials deposited by the Big Lost River. Surficial sediments at the ICPP are divided into two distinct layers. The upper layer is a poorly sorted gravel to gravelly coarse sand with abundant well-rounded small cobbles and traces of silt and clay. The larger fractions of the sediments are composed largely of quartzite, limestone, dolomite, and fine-grained igneous rock. This layer extends down to the basalt, generally between 40 feet and 50 feet, or to a fine-grained layer that directly overlies the basalt.

The ICPP facility (within the ICPP security fence) is surrounded by a storm water drainage ditch system that eventually drains outside the fence to an abandoned gravel pit east of ICPP. The storm water is sampled at the discharge to this abandoned gravel pit and analyzed according to the SWPPP for Industrial Activity (SWPPP-IA). Results from this analysis can be found in the SWPPP-IA (DOE/ID-10431).

2.2 Existing Structural Controls

Structural, both natural and manmade, storm water controls that are in place at the ICPP include the following:

- Flat terrain—The flat terrain (less than 1% slope) at the ICPP is a velocity dissipation control and reduces the amount of sediment that can be carried in storm water.
- Gravel—Most of the area at the ICPP has been disturbed and replaced with gravel, which is a velocity dissipation control. This gravel has very few fine particulate that can be picked up and transported in storm water.
- Drainage ditches—Throughout ICPP drainage ditches intercept storm water.
- Sediment basin—All storm water inside of the ICPP fence is directed to an abandoned gravel pit on the east side of the plant.
- Percolation of storm water—The soil types in the ICPP area allows much of the storm water to percolate, which significantly reduces the amount of storm water collected in the ICPP storm water system.
- Buffer zone—If the storm water handling system at the ICPP ever overflowed, then storm water would meander for approximately 1,300 feet before reaching the Big Lost River System. The buffer zone is composed of grasses and sage brush.

2.3 Runoff Coefficient

The runoff coefficient inside the ICPP fence was not calculated because only four projects are expected to permanently alter storm water infiltration through 2001 (see Appendix IIB). Those projects are expected to have an insignificant influence on ICPP's runoff coefficient. Only about 1% of the ICPP area will be changed. Four soil remediation projects are planned that will return the ground surface to its previous condition and not influence the runoff coefficient.

2.4 Other Controls

The following documents address spill prevention measures and spill response procedures.

- *Subcontractor Requirements Manual* (LMITCOb)
- *INEEL Emergency Plan/RCRA Contingency Plan*, Addendum 2, "ICPP" (LMITCOa).

2.5 Site Map

Appendix IIC contains the ICPP facility map, which shows drainage patterns, existing structures, and planned projects.

3. ICPP PLANNED ACTIONS

The table in Appendix IIB lists the planned actions in the ICPP facility. The information is approximate due to future funding decisions and lack of design data. Appendix IIC contains the site map of ICPP, which shows planned project locations.

Typical construction activities at the ICPP include:

- Utility upgrades/expansion, including electricity, water, sewer, transportation
- Communications upgrades/expansion, including telephone and radio
- Building construction
- Building demolition
- Decontamination and decommissioning
- Environmental restoration.

4. REFERENCES

DOE-ID, *INEEL Storm Water Pollution Prevention Plan for Construction Activities*, DOE/ID-10425, Department of Energy Idaho Operations Office, Current revision.

DOE-ID, *INEEL Storm Water Pollution Prevention Plan for Industrial Activities*, DOE/ID-10431, Department of Energy Idaho Operations Office, Current revision.

DOE-ID, *INEL Groundwater Monitoring Plan*, DOE/ID-10441, July 1994.

Irving, J. S., 1993, *INEL Environmental Resources Document for the Idaho National Engineering Laboratory*, Volumes I and II, EGG-WMO-10279.

Lockheed Martin Idaho Technologies Company, *INEEL Emergency Plan/RCRA Contingency Plan*, Addendum 2, "Idaho Chemical Processing Plant," Manual 16A-2, Current issue.

Lockheed Martin Idaho Technologies Company, *Subcontractor Requirements Manual*, Current issue.

Appendix IIA

ICPP Geomorphology and Soils

The *INEEL Groundwater Monitoring Plan* includes the following discussion in Section 6.2, "Physical Setting."

6.2.1 Physiography. The ICPP area is located on the flood plain of the Big Lost River in the south-central part of the INEEL. The channel of the Big Lost River crosses the northwestern corner of the ICPP area, trending roughly northeast. The flood plain slopes northeastward toward the Lost River Sinks at the rate of about 4.5 m (15 ft) per mi.

6.2.2 Geology. The ICPP is located on alluvial materials deposited by the Big Lost River and by wind-blown sediments. Surficial sediments at ICPP is divided into two distinct layers. The upper layer is a poorly sorted gravel to gravelly coarse sand with abundant well-rounded small cobbles and traces of silt and clay. The larger fractions of the sediments are composed largely of quartzite, limestone, dolomite, and fine-grained igneous rock. This layer extends down to the basalt, generally between 12 m (40 ft) and 15 m (50 ft), or to a fine-grained layer that directly overlies the basalt.

Within the confines of ICPP, the surface alluvium is thickest at borehole USGS-40 with a depth to basalt of 15 m (50 ft), and is thinnest at borehole USGS-59 with a depth to basalt of 6 m (20 ft). The surface alluvium generally thins from north to south and from west to east. When encountered, the underlying fine-grained layer is composed of a fine sand to a clayey silt and is commonly from 0.6 to 1.8 m (2 to 6 ft) thick. This fine-grained layer appears to occur independently of the depth to basalt as the material is found both in depressions and high areas on the basalt.

Appendix IIB

ICPP Planned Actions

Map Key[a]	Projects	Fiscal Year Construction Schedule	Area (ft^2)	Runoff Coefficient Information			
				Pavement (ft^2)	Roof (ft^2)	Permeable (ft^2)	No change
1	Security Facilities Upgrade	1997	39,000	0	+39,000	-39,000	
2	New Control Room for Waste Systems Operations	1997	4,500	0	+4,500	-4,500	
3	TMI Dry Cask Storage Project	1998	146,000	0	+146,000	-146,000	
4	CPP-663 Roof Replacement	1997	68,000				X
5	Radio Chemical Counting Facility	1998	7,000	0	+7,000	-7,000	
6	Contaminated Soils Remedial Action-OU 3-02	2001–2005	27,000				X
7	Contaminated Soils Remedial Action-OU 3-07	2001–2005	515,000				X
8	Contaminated Soils Remedial Action-OU 3-08	2001–2005	16,500				X
9	Contaminated Soils Remedial Action-OU 3-09	2001–2005	106,000				X

a. Appendix IIC

Appendix IIC

Site Map