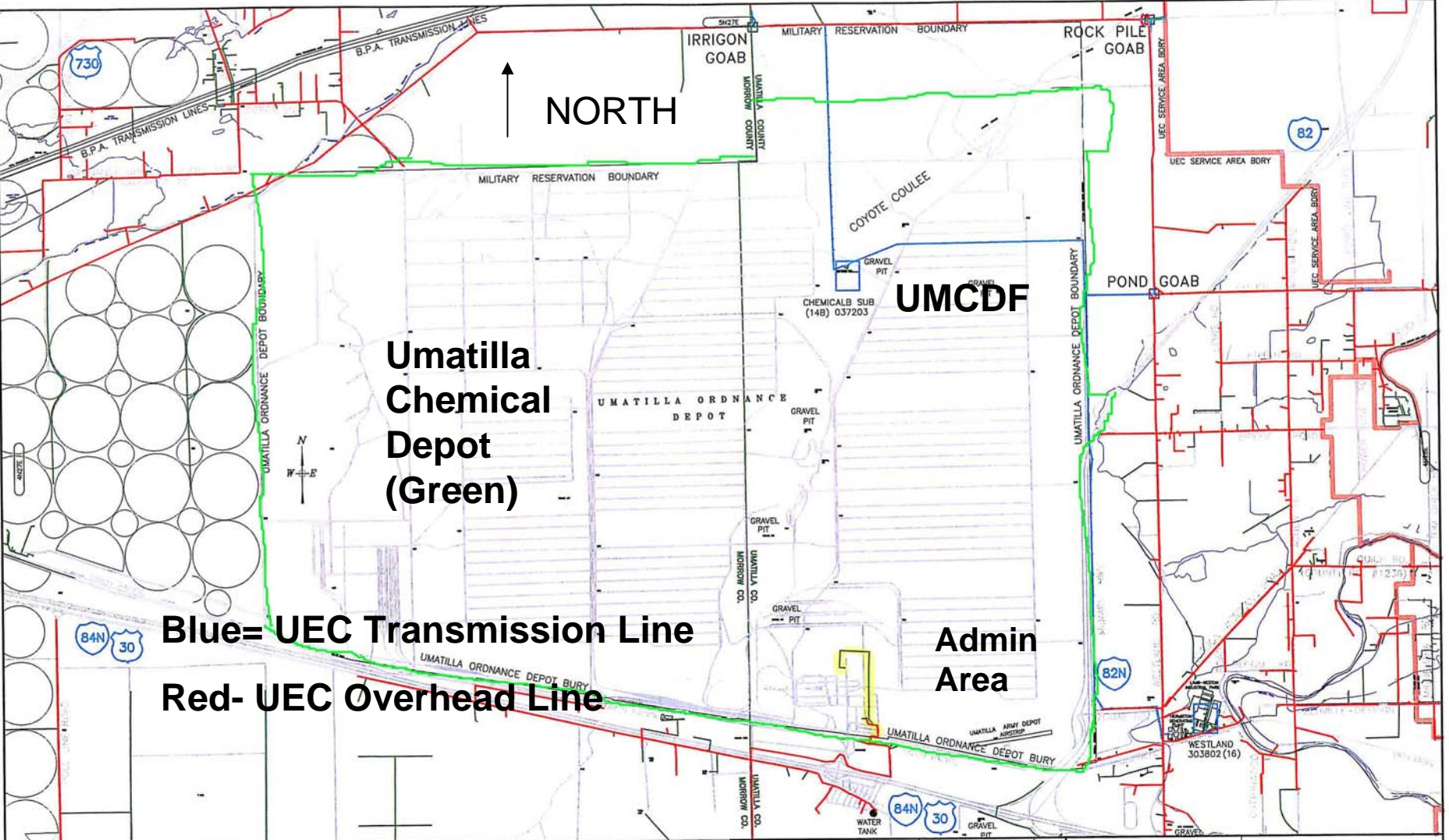


DANA MISSION SUPPORT TEAM UMCD ELECTRICAL OVERVIEW

Information provided by:

**Bernard Fineberg, Electrical Engineer &
Richard Walker, P.E. Electrical Engineer**

October 22, 2009



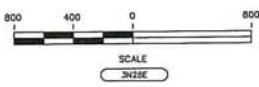
Blue= UEC Transmission Line
Red- UEC Overhead Line

**Umatilla
 Chemical
 Depot
 (Green)**

UMCDF

**Admin
 Area**

- UEC DISTRIBUTION OVERHEAD POWER LINE
- UEC DISTRIBUTION UNDERGROUND POWER LINE
- UEC TRANSMISSION POWER LINE
- BPA TRANSMISSION POWER LINE



X:\CADY\MISC\ArmyDepo\AreaMap

COMPILED FROM: UNITED STATES GEOLOGICAL SURVEY QUADRANGLE MAPS AND UMATILLA CO. MAPS	DATE	REVISIONS	BY
COMPILED BY: UMATILLA ELECTRIC CO-OP ASSN AUSTIN HAGAN, CORPORATION KENNESAW, WA 98339			
NOTE: This map may not be complete or accurate but was obtained from the best information available.			

UMATILLA ELECTRIC
 COOPERATIVE ASSOCIATION
 HERMISTON, OREGON
 08/12/09

Umatilla Army Depot Area		
STATE AND COUNTY	FILENAME	MAP NO.
OREGON Morrow/Umatilla		Area Map
1" = 3500'		

UMCD ELECTRICAL HISTORY

- **Installed in the early 1940's**
- **Original wiring updated 1950's - 1970's**
- **Various missions and upgrades since that time**
- **No drawings of present electrical power system “*they don't exist*”**
- **Knowledge of UMCD electrical is in peoples heads (not on paper)**

UMCD ELECTRICAL CONDITIONS

- **Overview inspections of facilities**
- **Areas in use are minimally maintained**
- **Some wiring insulation falls off when wire sheaths are touched**
- **Lack of neutral wire that NEC Code requires for safety**

UMCD ELECTRICAL CONDITIONS (Cont.)

- South Admin areas are minimally maintained**
- West power systems mostly dismantled or abandoned**
- North feeds only UMCDF & built to code**
- North redundant power from Morrow (West) and Umatilla (East)**

UMCDF ELECTRICAL SYSTEM

- Built in 1990's
- Currently maintained on regular basis
- Meets (NEC) in effect at time of construction
- Only feeds the UMCDF footprint
- North Substation is feed from both Boardman and Umatilla to reduce outage potential
- May be upgradeable as needed

The “GOOD”

**Backup Generator
2.856 MVA, 4160V**



**UMCDF Switchgear &
Transformers**



The “BAD”

**Example: Building 450 RV Storage Building
No building lighting or electrical service**



The “UGLY”

100 AREA WAREHOUSE PANEL



RISKS & COSTS

- **Lack of drawings = increased risk of electrocution (Lockout/ Tag-out issues)**
- **Lack of drawings = maintenance confusion**
- **Scheduling challenges with Army during maintenance outages**
- **Backup generator coordination issues with the Army (safety issues)**
- **Agreement with Army on maintenance and cost reimbursement**

RISKS & COSTS (cont.)

- **Cost to produce new drawings**
- **Cost of a North-South Intertie line**
- **Cost to replace Admin transformers**
- **Cost to replace old lines to facilities**
- **Cost to upgrade to NEC Code**
- **Costs of maintenance for lines, switchgear, poles, UPS & transformers**

ARMY RISKS

- **Failing old wiring insulation = risk of short circuit and fire hazard**
- **Loss of control of Army electrical service (coordinate Lockout/Tagout with UEC)**
- **Coordinate backup generator usage issues with UEC**
- **Safety interface with UEC**
- **Continued liability issues with 2 wire/no ground in buildings**