

2014 Annual Meeting of the IEEE PES Substations Committee

Technical Tours

Intel Ronler Acres D1X

Monday, May 19 3:00-6:00pm

Tuesday, May 20 8:30-11:30am

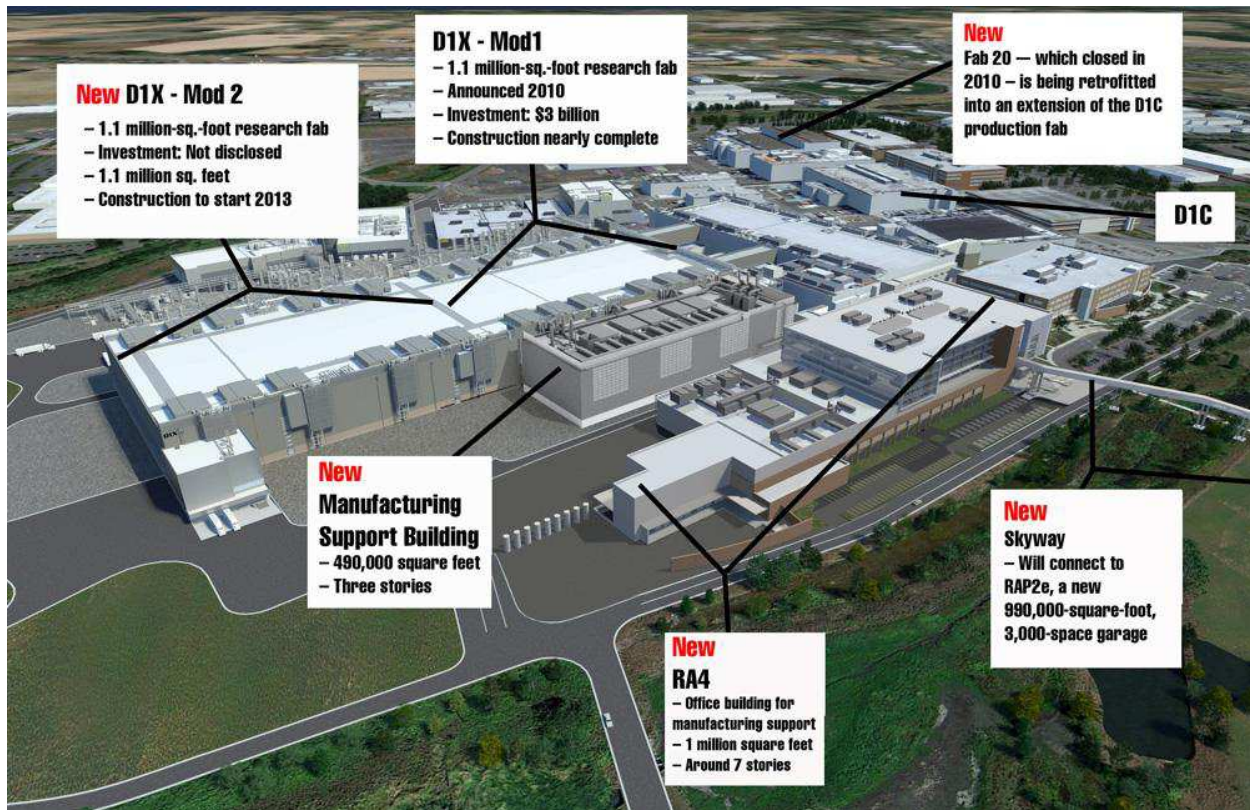
Driver's license ID required to obtain a visitor badge for the tour

Intel is the largest non-government employer in the state of Oregon and the largest customer in Portland General Electric's (PGE) service territory, operating from four campuses in the greater Portland area.

Ronler Acres is the largest Intel campus worldwide and dedicated solely to research and development. D1X is the new Ronler Acres facility that will develop the industry's latest technology for our use in the next decade. The D1X project was split into two phases: MOD1, a 1.1 million square foot facility was completed in 2013 and MOD2, which is a duplicate of MOD1, will be completed in 2014.

Intel's electrical service requires high reliability due to the financial impact caused by either losing service or their sensitivity to power quality events. The D1X facility required PGE to design its first 35 kV distribution service because of Intel's ultimate load and reliability requirements. Intel designed reliability into their electrical service at Ronler Acres by installing a 35 kV Gas Insulated Switchgear (GIS) ring bus. GIS was chosen primarily for challenges around space, but has the added benefit of reducing arc-flash hazard at the D1X facility.

The Ronler Acres tour will include the D1X 35 kV GIS, motor control centers (MCCs) feeding process motors and the process loads used in controls and support of Intel's research. PGE engineers will be on hand to discuss our service to Intel and answer any questions around the challenges faced in serving the D1X facility.



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Bonneville Dam

Wednesday, May 21 8:30am-12:30pm

Due to 45 day notice required, foreign nationals (non-US citizens) are not allowed on the tour

PPE Requirements:

- Long Pants and close toed shoes are required, tennis shoes are allowed.

Bonneville Lock and Dam located in the Columbia River Gorge National Scenic Area is located 40 miles east of Portland, Oregon. Built and operated by the U.S. Army Corps of Engineers, it was the first federal lock and dam on the Columbia and Snake rivers. Construction began in 1933 and the lock and dam was dedicated by President Franklin D. Roosevelt on September 28, 1937. A second powerhouse was constructed between 1974 and 1981 on the Washington shore. When the first of the eight units began producing electricity in 1981, Bonneville Lock and Dam combined the oldest and newest federal power plants on the Columbia River. The second powerhouse produces 635 megawatts, making Bonneville's total output over 1,200 megawatts, enough to supply the power needs of 900,000 homes. Bonneville Lock and Dam was placed on the National Register of Historic Places as an historic district in June 1986.

AGENDA:

- Arrive via I-84, exit 40, assemble in Project Office building, Operations Project Managers Office, park in first parking lot on the left coming into project (just West of the flag pole) , Project Office is building to the South
- Check in, receive security badges, meet and greet staff
- Operations Project Manager Jerry Carroll will provide a project overview with focus on authorized purposes with identification of tour sites including safety and security brief
- Power House One: Assemble south employee parking lot. Discussion: Major rehabilitation, protective relays, direct funding program, WECC/NERC requirements, FCRPS mission support in partnership with Bonneville Power Administration, coordination of river operations and power generation in a systems approach.
- Power House Two: Assemble South end Service Bay. Discussion: Unit 11 rotor/stator impact and history to present condition, high forced outage rate, installation of vibration and air gap monitoring systems, importance of FCRPS requirement for unit reliability and availability.
- Visit Washington Shore Fish Viewing Building, view fish and lamprey in ladder system, additional discussion on fish passage improvements and aging infrastructure.
- Return to Project Office, return security badges

