

# Exelon's Nuclear Reactors... What is Proposed Derived from Combined Operating License Application

## Applicant and Owner

Exelon Nuclear Texas Holdings, LLC (Exelon), is applying to the Nuclear Regulatory Commission (NRC) for Combined Operating Licenses for Victoria County Station, units 1 and 2, two nuclear reactors proposed for Victoria County, Texas, 13.3 miles south of the city of Victoria.

Exelon would be the applicant, owner and operator.

## Site Location

The reactors would be located on 11,500 acres, 4.1 miles west of the Guadalupe River. The site boundary runs through Linn Lake on the east, and runs adjacent to Highway 77 on the west and the Union Pacific Railway on the southeast.

## Reactor Information

The reactor would be the General-Electric-Hitachi ESBWR – the Economic Simplified Boiling Water Reactor. The design was submitted to the NRC for certification on Dec. 9, 2005, and certification will be completed sometime between late 2009 and 2012.

## Output

Each reactor would produce net electrical output of 1535 MW, for a total of 3070 MW.

## Cooling / Water

Normal cooling and emergency cooling systems would be separate. Emergency cooling would be through the ultimate heat sink. Normal cooling would be through heat dissipation from the cooling basin.

Makeup water to the cooling basin would be from the water pumping system operated by the Guadalupe-Blanco River Authority (GBRA).

This GBRA –supplied water is from the Calhoun Canal and would be provided through water rights held by the GBRA. Makeup water to the cooling basin compensates for evaporation, seepage and blowdown. Discharge of cooling basin blowdown water and treated radwaste effluent would be to a diffuser located mid-channel in the Guadalupe River.

The blowdown would be transported to an underground pipeline located along the route of the heavy haul road from the reactor block area to the Guadalupe River.

The same GBRA water pumping system would fill the GBRA water storage reservoir, approximately 1300 acres, located on the reactor site.

A separate cooling basin of 4938 acres would also be on the reactor site.

A pipeline and pumping system would transport GBRA water from the storage reservoir to the Coletto Creek Reservoir located 11 miles west of the reactor site.

The water in the GBRA storage reservoir and the water piped to Coletto Creek Reservoir would supply other GBRA customer needs and would not be part of the operation of the Victoria County Station nuclear reactors.



## Transmission

The reactor site would be served by the WHY substation on the northwest side of the power block area. American Electric Power (AEP) would be the transmission service provider and would be responsible for construction of new transmission circuits to be built in association with the proposed VCS reactors.

The onsite AEP Why substation would cover about 90 acres. A 345 kV interconnection would be needed to tie the nuclear reactors into the AEP grid. Six 345 kV transmission routes could connect the VCS reactors to Coletto Creek, Hillje, Blessing, White Point, Cholla and South Texas Project Substations. New right-of-ways would be needed between VCS and Coletto Creek and VCS and Cholla. For the VCS – Coletto Creek line the right-of-way corridor would be 150 feet wide and contain one double circuit. The VCS – Cholla corridor would be for a single circuit 345 kV line. Existing right of ways and corridors would also be used.

## Proposed Dates for Major Activities

Subject to regulatory approvals and a decision to build, the following dates related to construction of VCS Units 1 & 2.

| <b>Milestone</b>                         | <b>Unit 1</b> | <b>Unit 2</b> |
|--|---------------|---------------|
| Submit COL Application                   | Sept 2008     | Sept 2008     |
| Begin 18-month<br>Preconstruction period | June 2010     | June 2010     |
| Receive NRC-issued COL                   | Nov 2011      | Nov 2011      |
| Pour first structural concrete           | Nov 2011      | June 2013     |
| Start pre-op testing                     | Dec 2013      | June 2015     |
| Complete construction                    | May 2015      | Nov 2016      |
| Load fuel                                | June 2015     | Dec 2016      |
| Commercial operations                    | Dec 2015      | June 2017     |

## Reviews, Approvals and Consultations

Authorizations are divided into three project phases: Preconstruction, Construction and Operation.

No Native American Tribal Agency authorizations are needed.

Some authorizations would be amended, revised or resubmitted to allow follow-on activities in the construction and operation phases. Exelon has begun discussions with some federal and state agencies from which authorizations would be required.

## Preconstruction

Activities that don't constitute construction are defined by 10 CFR 50.10(a)(2) and may be conducted without prior NRC authorization, although federal, state and local authorizations must be obtained to perform portions of the work.

COL applicants may begin preconstruction activities – including:

- planning and site exploration activities – including soil boring/sampling, installing monitoring wells, or additional geophysical borings.
- Site preparation including grading, nonsafety related drainage, erection of fences and other access control measures, excavation, erection of support buildings, building of service facilities (such as paved roads, heavy haul route, parking lots, railroad spurs, exterior utility and lighting systems, potable water systems, sanitary sewage treatment, transmission corridors), bridges, docking and unloading facilities.

## Construction

A Limited Work Authorization will not be sought for these reactors. Construction activities as defined under 10 DFR 50.10(a)(1) will not begin prior to obtaining a Combined Operating License from the NRC. Federal, state and local authorizations are expected to be obtained earlier in the project to support preconstruction and construction phase activities.

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