OCONEE NUCLEAR EMERGENCY PREPAREDNESS

Useful websites containing information related to emergency preparedness and nuclear industry regulation and policy:

duke-energy.com/safety/nuclear-emergency-preparedness.html

nei.org (Nuclear Energy Institute – a policy organization)

nrc.gov (U. S. Nuclear Regulatory Commission)

oconeecountyemergencyplanning.org

ready.gov (FEMA disaster preparedness tips)

scdhec.gov (SC Dept. of Health and Environmental Control)

OCONEE EMERGENCY SERVICES AND DUKE POWER PRESENTATION FOR WYNWARD POINTE EMERGENCY PREPAREDNESS MEETING

August 16, 2011 at the Oconee County Emergency Service Center in Walhalla

A large number of residents from Wynward Pointe met in a room dedicated to house all key county and community emergency resource leaders in an actual emergency or during a practice for an emergency. The large room is filled with desks, computers, several large screens showing critical maps and other vital emergency planning information. Detailed emergency procedures books fill the bookshelves. These procedures are individually designed with detailed action steps for each county and community designated emergency representative. The emergency facility and planning details are very impressive.

The two major presenters included **Sandra Magee**, Community Affairs of Duke Energy in Seneca and **Scott Krein**, Deputy Director /Acting Director of Oconee County Emergency Services. These presenters were backed up by other Duke Energy staff, staff responsible for monitoring the stability of nearby dams/gated spillways, and staff of Oconee County Emergency Services.

The Duke Nuclear Station staff and Oconee Emergency Services staff work very closely in developing detailed plans/strategies to anticipate various emergency possibilities. These plans include notifying residents via the media, the use of loudspeakers, and automated telephone calls to residents. Their planning is continuously being updated to include new strategies learned from various events especially Hurricane Katrina and the recent horrific disaster in Japan that caused major damage to their coastal nuclear facility.

Neighborhoods and families are strongly encouraged to have a defined emergency plan which anticipates preparation for a tornado, severe electrical storm, snowstorm, earthquake, flash flood, hurricane, nuclear emergency or other unexpected emergency.

Citizens are advised to prepare ahead for an emergency:

Sign up for telephone alerts by registering on www.alertoconee.com

Obtain the annual Oconee Nuclear Station calendar which is mailed in December to residents in the 10 mile emergency planning zone around the Station. The calendar includes the dates of siren tests, a form to complete and submit for family members needing special emergency assistance and a map with information about Duke emergency zones and shelters. The residents of Wynward Pointe within 2 miles of the Station are in Zone A-O North, while those above the 2 mile radius are in Zone F-1.

Potassium Iodide (KI) is a non-prescription drug that 'might' be recommended in nuclear emergency and is available to residents within 10 miles of the station at no cost through the county health department. Updated guidelines recommend not taking the drug unless advised by emergency officials. There could be some health risk if the drug is not needed.

Neighborhood Planning is very important ! Neighbors helping neighbors is critical in an emergency. Every household should plan with their neighbor using the MAP YOUR NEIGHBORHOOD (MYN) brochure/DVD and other excellent handouts available at Oconee County Emergency Services.

Home owners should have a regularly updated emergency kit with flashlights, emergency radio, batteries, food, water, prescriptions, cash, family contact telephone numbers, prescription drugs, area road maps, plan for animals (know the available emergency animal shelter locations/numbers) and have a supply of animal food.

Other Interesting Points of the August 16th Meeting:

The Duke Energy Station draws its water for cooling requirements from Lake Keowee. If the Lake is seven feet below full pond, officials at the station begin discussing options about the possible need for a shut down, but the Station can operate at this level by implementing some contingency measures. Someone pointed out that at one time the lake was 15 feet below full pond and the Station continue to function. If lake levels become lower, there is back-up water in a holding pond and in water tanks to cool the reactors in emergencies.

District Schools conduct emergency drills in anticipation of various kinds of emergencies and collaborate with local emergency service officials.

The Duke station in Seneca conducts quarterly drills based on a trial emergency situations. Duke staff are not aware in advance of the type of emergency that will be staged.

The two earthen dams on RT 130 on Lake Keowee have pipes sticking out of the ground near the roadway…these pipes allow sensitive instruments to test for seepage and any ground movement. These dams are inspected every two weeks or more often if there is a heavy rain or earth tremor. Lakes Keowee and Jocassee have dams which are built to specifications to handle major incidents. There are flood plain maps under development for the Lake Keowee area. At least annually, the Federal Energy Regulatory Commission (FERC) makes inspections at the Duke dams.

The closest fault lines to the Oconee Nuclear Station are in Charleston, Aiken and Brevard. The Station was designed to withstand a sizably larger quake historically recorded at any of the closest fault lines. Seismic activity is continuously monitored at the Station.

Spent fuel rods from the Duke Station are stored at the facility… initially for ten years in very thick cement, lead lined pools and then placed in dry cask containers for an indefinite period. The Nevada storage site for nuclear waste has never been opened.

Contact Information:

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Sandra Magee, Duke Energery Sandra.Magee@duke-energy.com

Nuclear Regulatory Commission (NRC)

Reactor Oversight Program
Oconee Nuclear Station (ONS) Annual Assessment
Notes from public meeting, Tuesday, April 19, 2011

NRC Presenters:

- Mr. Bill Jones, NRC Deputy Director, Division of Reactor Projects
- Mr. Jonathan Bartley, NRC Chief, Reactor Projects Branch 1
- Mr. Andy Sabisch, NRC Senior Resident Inspector, ONS

2010 ONS Annual Assessment: (summary and complete report on NRC website)

- Annual assessments evaluate many areas/functions including:
  - Equipment alignment
  - Fire protection
  - Operator response
  - Emergency preparedness

    - Radiation release controls
    - Worker radiation program
    - Corrective action program & case reviews
- NRC uses color codes to categorize safety status of facilities and operations:
    - GREEN – Very low severity or no safety issues (normal/desirable status) – ONS status in December 2009
    - WHITE – Low to moderate safety issue(s)
    - YELLOW – Substantial safety issue(s)
    - RED – High safety issue(s) – NOTE: There has only been one instance of a RED color code since 2000, and that pertained to a Toledo OH facility.
- NRC placed ONS Units 1, 2, & 3 in "degraded" status for all 4 quarters of 2010 due to YELLOW findings for Units 1, 2, & 3 and WHITE findings for Units 2 & 3, resulting in increased oversight (18,000 NRC man-hours of inspection-related activities in 2010 – two to three times normal).
- YELLOW findings for Units 1, 2, & 3 were for the Standby Shutdown Facility reactor coolant makeup subsystem remaining inoperable for greater than the allowable period of time (partially clogged in-line filters).
- WHITE findings for Units 2 & 3 were for failing to promptly identify and correct adverse conditions affecting operability of the Standby Shutdown Facility after the issue was identified on Unit 1.
- A December 2010 NRC follow-up inspection determined Duke Energy had satisfactorily corrected both deficiencies. As a result, the NRC closed the yellow and white findings and issued an assessment letter (see NRC website) in March 2011 which states the NRC will once again be performing routine inspections at ONS based on the satisfactory resolution of the deficiencies addressed in 2010 – in other words, the NRC returned ONS to "normal" oversight status for 2011.
- Mr. Preston Gillespie, Duke Energy ONS Site Vice President, responded to the NRC assessment by stating he has no contentions with their findings and appreciates the productive oversight climate fostered by the inspectors. He further stated safety is always the top priority at ONS and the company is dedicated to making continued improvements to ongoing work practices. Mr. Gillespie did not go into detail regarding the specific NRC findings or the company's resulting corrective actions because he said they had been covered at a previous public meeting, but he said he would answer any questions the audience might have after the meeting adjourned. He then gave some brief comments regarding Duke's community relations and interaction.
- After Mr. Gillespie's comments, the NRC officials opened the meeting to public comments and questions from the audience. For the most part, the questions pertained to safety systems/capabilities at ONS and the situation in Japan.

Additional Miscellaneous Information:

- NRC mission regarding US nuclear power plants: License operators; provide oversight, regulation, evaluation, and enforcement of operations; and respond to events and emergencies to ensure public health and safety. During actual incidents or accidents, the NRC will work side-by-side with the licensee and provide any requested help or information to mitigate the adverse situation.

- The NRC regulates nuclear facilities but has no role in promoting nuclear energy – in 1975 the Atomic Energy Commission was split into the NRC (regulatory role) and the Department of Energy (promotional and research roles).
- Resident NRC inspectors (4 at ONS) must rotate location assignments at least every 7 years to prevent complacency. Current ONS resident inspectors have been at ONS less than 2 years; however, collectively they possess more than 60 years of industry experience. Fraternization with licensee personnel is strictly prohibited to maintain integrity, objectivity, and independence.
- Despite current political obstacles preventing its use, Yucca Mountain NV remains the officially-designated national long-term storage and disposal facility for spent nuclear fuel and high-level nuclear waste. The government continues to pursue activation of this facility. In the interim, spent fuel generated at ONS is stored on site. After being removed from the reactors, the fuel is stored in water pools for 7-10 years to allow for cooling. The fuel is then placed in dry-cask storage containers on site.
- According to Mr. Gillespie, ONS originally cost about $500M in 1970. Duke Energy has spent $1-2B in the last 10 years on upgrades and refurbishments.
- According to Mr. Gillespie, ONS is the first nuclear power plant in the US to convert from analog to digital control systems for the engineered safeguard system and the reactor protection system.
- In a nutshell, the hazardous situation that currently exists at the Japanese Fukushima nuclear power plant resulted from a loss of electric power to operate the valves and pumps required to cool the reactors and spent-fuel pools. As a result, many people want to know about ONS's capability to handle power outages. According to Duke Energy (information provided during conversations with officials after public meeting adjourned), electric power to run ONS control systems and cooling pumps can be drawn from multiple normal, backup, and emergency sources to include the following:
  - National power grid transmission lines
  - Keowee hydroelectric power plant (via either above-ground or buried transmission lines)
  - On-site diesel generator (protected inside a building)
  - Off-site combustion gas turbine generators (separate dedicated/secure transmission lines)
  - Any operating ONS unit can provide secure power to the other units
  - Batteries for control systems (as a last resort or during power source transfers)

  In addition:
  - Steam-driven pumps that do not require electricity to operate can remove heat from the reactor
  - ONS has multiple normal, backup, and emergency sources of cooling water that can be pumped to the reactors and spent-fuel pools
- Reactors will begin an automatic shutdown sequence if ground motion sensors detect even slight earthquake tremors.
- On May 15th, the NRC plans to publish on its website a report on lessons learned from the Japanese nuclear accident at Fukushima. There is currently on the website a set of frequently asked questions regarding Fukushima.

- **For more information, including the ONS assessment report (both summarized and complete) and letter, the regulatory process, the nuclear situation in Japan, and much more, visit the NRC website at www.nrc.gov. THIS IS AN EXCELLENT WEBSITE PROVIDING A WEALTH OF INFORMATION.**

- **For more information about Duke Energy or ONS, visit the World of Energy or call 1-800-777-1004 any time you have a question.**

David Wittnebert
Shelter Cove Subdivision

EMERGENCY PREPAREDNESS MEETING -- April 5, 2011

Subject: Minutes, Emergency Preparedness Meeting, Tuesday, April 5, 2011
Oconee County Emergency Operations Center
300 S. Church Street, Walhalla, SC

Invitees: Duke Energy, Sandra Magee, Community Affairs
Mountain Lakes Community Association (MLCA), neighborhood representatives
Oconee County Fire and Rescue, Eric Lutz, Interim County Fire Chief
Oconee County Emergency Management, Scott Krein, Deputy Director
Pickens County, Emergency Management, Operations Chief, (Mr.) Lynn Fisher
Kathy Knull, resident, Keowee Key
Diane Rikard, resident, Wynward Pointe
Scott Walker, Keowee Rescue-22

Objectives: -Identify emergency preparedness capabilities currently in place at the county level and at Duke Energy, Oconee Nuclear Station (ONS).
-Identify areas for further discussion with action plan and next steps.

Meeting agenda: -Statement of objectives and introductions
-Current emergency preparedness capabilities
Oconee County Emergency Services, Fire and Rescue
Pickens County (representative unable to attend)
-Duke Energy perspectives on preparedness

Attendees: -Scott Krein, Eric Lutz – Oconee County Emergency Services, Fire and Rescue
-Sandra Magee – Duke Energy
-Brandon Shirley – Keowee Fire
-Scott Walker – Keowee R-22
-Jim Pees (Pine Ridge Pointe), Carl Fortson (Keowee Shores), Lynn Callahan (Chickasaw Point), Robert Jones (Foxwood), Dave Wittnebert (Shelter Cove), Kathy Knull (Keowee Key), Diane Rikard (Wynward Pointe)

Meeting Summary:

Scott Krein, Oconee County (OC), Emergency Management, opened the meeting. After a review of emergency exits and other logistics within the facility, the meeting objectives as stated above werereviewed. Scott indicated that community involvement and the awareness of emergency preparedness is very important.

Diane Rikard, one of the meeting's organizers, discussed how the meeting came about and the hopes for future meetings with broader community participation.

Scott Krein provided an overview of OC's emergency capabilities including emergency power with diesel and natural gas support for the OC emergency operations center as well as direct phone, cable and satellite communications. In addition there are two mobile command centers available to be dispatched on scene for emergencies. Most comparably sized communities only have one mobile command center.

There is a regional backup command center that will support the five county region (Oconee, Pickens, Anderson, Abbeville, Greenwood) that will be built at Clemson University which is providing the funding. Emergency evacuation plans were updated after the September 11, 2011 terrorist attacks.

There are 64 exterior sirens throughout Oconee and Pickens counties to alert the public to any emergency associated with the Oconee Nuclear Station (ONS.) These sirens are maintained by Duke Energy, with the county conducting the quarterly tests. In the event of an actual emergency, the sirens will sound continuously instead of the two minutes during the tests. Residents should turn on a radio or television for additional information. The initial notification regarding an emergency is sent to 93.7 FM and a call tree is used to contact other radio and TV stations.

There is a review of the Oconee County Natural Hazard Mitigation Plans on Monday, April 11, 2011 at 7 PM, Oconee Council Chambers, 415 S. Pine Street, Walhalla. The public is invited.

There is a special needs card in the Duke Energy calendar. Those with special needs are asked to fill out their information which is kept private. The counties have a list of contact info for these special (functional) needs residents. If there is no response, someone from Fire and Rescue is dispatched to check on the individual. There are 425 people listed as having functional needs. Duke Energy customers who identify themselves to us as medical alert customers are notified when there is a power outage affecting their residence. Medical alert customers have medical related equipment in their home that needs electricity. This process is handled by completing a form found on the Duke Energy website. This is separate from the special needs card in the calendar. The special needs card in the calendar lets the county know who may need help with evacuation.

FEMA reviews the county plans every two years. Duke will be working on an update of evacuation routes using 2010 census data once it is finalized.

Sandra Magee, Duke Energy, provided background information on the emergency planning

and preparedness at ONS. The dams are seismic designed; the ground motion is measured in g force.
Instruments react to earth movement and the plant will start to shut down if movement is detected.
These are numerous design redundancies in the event of an earthquake.

There are four resident NRC inspectors at ONS. Spent fuel is kept on premises initially in spent fuel pools. After seven to ten years in the pools; the fuel is put into dry cask storage at the ONS site.

The Nuclear Energy Institute (NEI) is nuclear industry organization. It is a think tank that helps to make policy to safeguard the design and operation of nuclear facilities in the United States. Their website, NEI.org is closely following the events in Japan and provides daily updates. Also, "lessons learned" will be brought back from Japan for implementation in the U.S.

The NRC will be holding a public meeting at the Oconee Nuclear Station on Thursday, April 19, 2011 from 6:30 PM to 8:00 PM at the World of Energy, 7812 Rochester Hwy, Seneca, SC to discuss the NRC Reactor Oversight Process and the Annual Assessment of the Oconee Nuclear Station. The public is invited to attend this meeting and will have time for questions and comments after the presentations.

Brandon Shirley, Assistant Chief, Keowee Fire, stated that is important that residents be aware and prepared in the event of any kind of emergency not just one associated with ONS.

Scott Krein spoke about the Community Emergency Response Team (CERT) program which offers training to members of the community to provide readiness in the event of any individual or area emergency. More information regarding CERT is available at oconeecountyemergencyservies.com.

There was wrap up discussion among the attendees. Scott Krein and Sandra Magee indicated their willingness and eagerness to participate in any future meetings that would reach even more representatives and residents from the surrounding area.

Handouts were provided to each neighborhood representative, including:

- Preparing Makes Sense. Get Ready Now. (Homeland Security)
- A Family Handbook: Preparing for Emergencies – Terrorism and Disasters
- Preparing for Natural Disasters Key Points
- Preparing Your Pets for Emergencies Makes Sense. Get Ready Now. (Homeland Security)
- CERT (Community Emergency Response Team)
- Fire Prevention Landscaping Tips (bookmark)
- Tornado Safety Tips (bookmark)
- Emergency Planning Information Summary – Oconee Nuclear Station
- Discover the World of Energy and Oconee Nuclear Station – Duke Energy
- Recommendations for Potassium Iodide (KI) Use During a Radiological Disaster (DHEC)
- Are You Ready? An In-depth Guide to Citizen Preparedness (book – one per neighborhood)
- For those who didn't have the 2011 Emergency Planning Calendar, Oconee Nuclear Station, one was provided.

The follow up actions taken were:

- to distribute preliminary minutes to participants for additions, corrections, comments;
- communicate through MLCA to get a representative assigned from more neighborhoods for ongoing planning (neighborhood or multi-neighborhood level plans, meetings, communications)
- communicate public forum meetings through MLCA
- distribute the final minutes to meeting attendees and reps from other neighborhoods
- distribute the handouts to additional neighborhoods through their designated rep