



NAYGN 2019 SOUTHEAST REGIONAL CONFERENCE

Education Outreach

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Presentation Topics

- * Nuclear 101 Teachers Workshop
 - * Logistics
 - * Presentation
 - * Activities
- * Hosting Students and Tour Groups
- * Nuclear / Green Energy School Presentations
- * School Career Presentations



Background

- * Started several years ago by NAYGN
- * Goal to provide teachers with the necessary concepts and educational tools to take back to their classrooms
- * Station has expanded and formalized the program
- * One of the station's largest and most successful annual events
- * Every year the program gets modified
- * How can you start your own Nuclear 101?

Logistics

- * Coordination with other ERGs
 - * Need 20 - 30 volunteers to help
 - * Use committees as needed – invites, presentations, escorts, activities, tours
- * Pick a date
 - * We always choose a Friday
 - * Make sure station can support
 - * For Fall, send invites late Spring
 - * For Spring, send invites early Fall
- * Draft an invitation letter
 - * Timeline for RSVP and limit
 - * We use Google Form
 - * SVP sign letter
 - * Optional sample agenda

LaSalle County Generating Station cordially invites our community STEM educators for our signature education event, "Nuclear 101," on Friday, September 28, 2018, starting at 8:00 a.m. As local educators, we want you to understand our station's day-to-day operations and safety components. Along with presentations, activities, and a tour of our plant and control room simulator, we will provide you with materials and resources to teach nuclear science in your classrooms. Our team is looking forward to meeting you and answering your questions.

Please refer to the enclosed tentative agenda for the day's events.

Spaces are limited, so reserve your spot soon. Please use the Google Form at the following link to complete your registration by August 19, 2018:

Logistics

- * Find contact information for targeted teachers
 - * What grades will you target?
 - * Middle School and / or High School is best (we rotate)
 - * Solicit ERGs and station personnel
 - * Google all the schools in your area based on target areas
 - * Look up school websites to find the science teachers and/or principles
 - * For up to 30 teachers, we send 70 – 100 invites out.
 - * Send a second round of invites if needed
- * Stay organized with invites for reproducibility
 - * Keep track each year of schools and teachers you invite and who came
 - * Continue to target local schools with no participation
 - * Branch out into a wider target area of reach
 - * Keep rotating so same teachers don't attend each year
 - * Continue to update the program so you can have repeat teachers in future years

Sample Agenda

AGENDA

(Tentative, subject to change)

8:00 – 8:45 a.m.	In-process through security
8:45 – 9:00 a.m.	Welcome/Light Breakfast
9:00 – 11:30 a.m.	Presentations, Group Activities
11:30 a.m. – 12:15 p.m.	Lunch/RP Brief
12:30 – 1:15 p.m.	Simulator Demonstration
1:15 – 2:30 p.m.	Plant Tour (Diesel Generator, Refuel Floor)
2:30 – 3:00 p.m.	Question and Answer, Wrap Up
3:00 p.m.	Exit LaSalle Station

- Leave enough time for in-processing
- Have enough volunteers to escort through security
- Provide refreshments throughout the day
- Have a senior leader provide a welcome if possible
- Have enough escorts throughout day including for tours
- Allow time at the end for a wrap-up and additional questions

Presentation

- * Expand upon standard community outreach presentation
- * Create and reuse a presentation that can be modified over time
- * Tailor the presentation to age group as necessary
- * Find nuclear science concepts (ANS, teaching curriculum or other sources)
- * Break it up with activities
- * Match presenters with areas of expertise
- * Practice makes perfect!



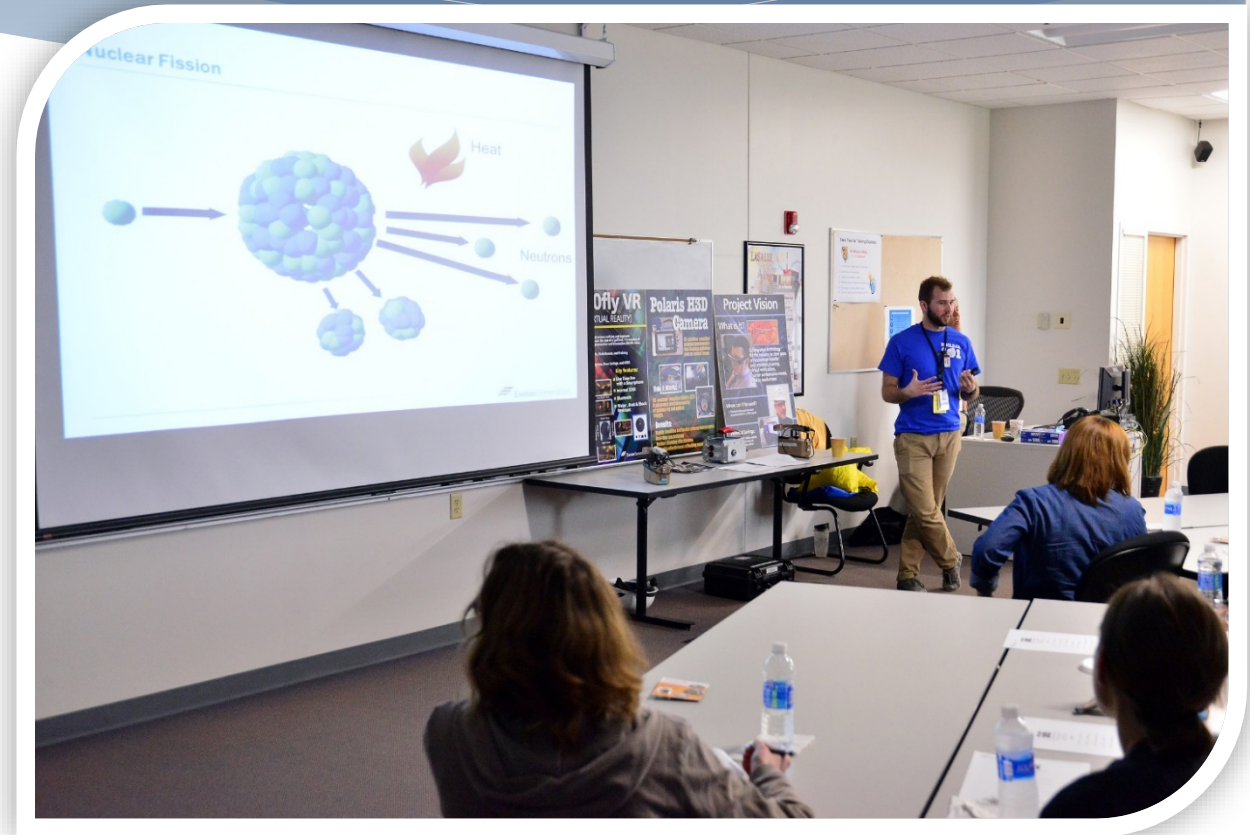
Presentation Topics



- * Explain why nuclear is important
 - * Powerful, reliable, clean
- * Power plant designs
 - * PWR vs BWR
 - * Defense in depth
 - * Major generation plant components
- * Nuclear fuel
 - * Design, equivalents, refueling, storage
- * Show and tell
 - * 3D printed turbine, mock fuel bundle, fuel pellet

Presentation Topics

- * Nuclear physics
 - * Atomic structure and isotopes
 - * Fission vs fusion
 - * Nuclear chain reaction and fission byproducts
 - * Fissionable atoms
 - * Neutrons, moderators, and poisons
 - * Decay and half-life concepts
- * Radiation
 - * Electromagnetic Spectrum
 - * Types of radiation
 - * Shielding, ALARA, contamination
- * Nuclear science applications
 - * Medical, food, propulsion , products



Other Items to Consider

- * Brand your event!
 - * Credit sponsors and ERG groups
 - * Get creative with a logo
- * Provide the materials
 - * Flash drives, google drive
 - * Handouts to take
- * Goodies
 - * Use your new logo!
 - * Promote your ERG and company
- * Partner up
 - * See if ANS, Scouts, or other groups have activities that you can both benefit from
- * Provide Education credit to teachers
- * Be careful of giving out your company propriety information



Activities

- * Space activities throughout presentation in applicable topic sections
- * Smaller and faster activities can be performed during lunch or right before breaks
- * ANS and other sites have many activity ideas
- * Like with presentations, practice makes perfect!



Some of our favorite activities



- * Human nuclear power plant
- * Chain reactions
- * M&M Half-life
- * Isotope bingo
- * Ping pong contamination and waste
- * Dress out race or demonstration
- * Personal radiation
- * Radiation around us demonstration
- * Perception of risk



Let's Play!



Give a Facility or Plant Tour

- * Have a changeable and reusable PowerPoint presentation
- * Utilize presentation as needed to discuss tour route and rules
- * Use your typical tour route or a simplified visitor route
- * Have enough tour leads and have Security aligned
- * Have a changeable and reusable PowerPoint presentation



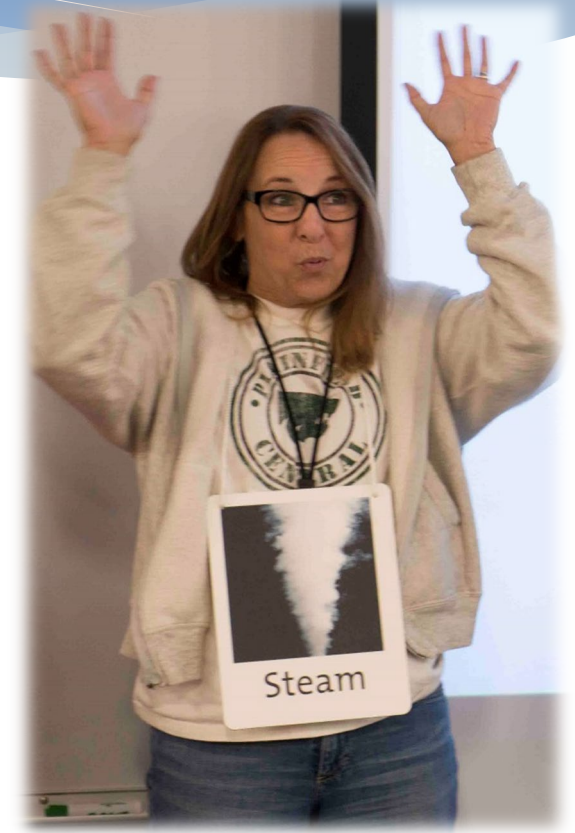
Give a Facility or Plant Tour



- * Provide lunch if necessary
- * Try to match the visitors and the presenter
 - * (engineering students – engineering presenter)
- * Stay on schedule (always have an agenda) and leave time for questions
- * Consider control room simulator demonstrations if at a plant

Nuclear/Green Energy School Presentations

- * Bring educational information for the teacher
- * ALWAYS do an activity
 - * Power Plant Game
 - * M&M Half-life Game
- * Have a changeable and reusable PowerPoint presentation



Trade School/Career Presentations

Engage the students

Getting Set-Up

- * Reach out to Guidance Counselors
- * Try to set-up something school wide (study hall)
- * Bring handouts, candy, trinkets
- * No more than 2-5 volunteers necessary
- * Ask if they know anyone who works at your plant
- * Ask if they're afraid of nuclear
 - * Explain why they shouldn't be
- * Tell them they can interrupt you with questions
- * BRAG ABOUT YOUR JOB AND LIFESTYLE

School Career Presentations

Career Paths

- * So many different careers at nuclear power plants
 - * Trade/Technical
 - * Engineering
 - * Chemistry
 - * Management
 - * HR
 - * Finance
 - * Etc.
- * Find some coworkers with interesting career history
- * Find some people who have held many different positions
- * Mention other career path options
- * “Corporate Lattice”

School Career Presentations

- * Severely lacking trades people
- * Females are far and few between
- * Suggest local trade schools (JJC)
- * Volunteer to help the students contact the schools
- * Exelon's tuition reimbursement program



**Operations
Engineering
& Technician**

Questions?