Gone with the Steam

How new nuclear power plants can re-energize communities when coal plants close

June 23, 2022
Devastating Impact of Coal Plant Closures….

- Two coal plans closed on the same day in rural Adams County, Ohio
- Loss of more than 700 jobs and devastation to the local economy
- The local school system has seen enrollment plunge and has cut positions
- “That money is never coming back” – Ty Pell [President of county commissioners]

Source: Washington Post, “In small towns across the nation, the death of a coal plant leaves an unmistakable void,” 2019
What Are We Replacing? At What Cost?

Retire Coal Plant

Coal Plant
Net 1,226 MW
68.0% CF
7,306,716 MWh

Replace with SMR/Advanced Reactor

SMR
Net 878 MW
95.0% CF
7,306,716 MWh

Replacing the energy produced from the coal plant
Coal Plant vs. SMR Plant
Why are SMRs a Good Replacement?

**Jobs By the Numbers**

A SMR nuclear plant employs over two times the number of people as a coal plant.

<table>
<thead>
<tr>
<th>Nuclear Jobs</th>
<th>Coal Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>237</td>
<td>107</td>
</tr>
</tbody>
</table>

Source: US BLS, Nu-Scale, SM Analysis
Why are SMRs a Good Replacement?

Jobs By the Numbers (Cont’d)

The median hourly wage rate different between Nuclear and Coal is……..

Nuclear Wage Rate

$41.32/hr

Coal Wage Rate

$33.64/hr

22%

How Can a SMR Provide More Better Playing Jobs and be Cost Competitive?

**Non-Capital Cost**

- **Coal**
  - Fuel, 66%
  - Variable O&M, 12%
  - Labor, 22%

- **Conventional Nuclear**
  - Fuel, 17%
  - Variable O&M, 17%
  - Labor, 66%

*Source: SM Analysis*
### Why are SMRs a Good Replacement?

#### Jobs By the Numbers (Cont’d)

<table>
<thead>
<tr>
<th>Coal Plant Position</th>
<th># Dedicated Coal Positions</th>
<th>SMR Position</th>
<th># Dedicated SMR Positions</th>
<th>Degree of Retraining Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations Supervisor</td>
<td>5</td>
<td>Senior Reactor Operator</td>
<td>5</td>
<td>High</td>
</tr>
<tr>
<td>Control Room Operator</td>
<td>10</td>
<td>Reactor Operator</td>
<td>15</td>
<td>High</td>
</tr>
<tr>
<td>Field Operator</td>
<td>15</td>
<td>Non-Licensed Operator</td>
<td>25</td>
<td>Low</td>
</tr>
<tr>
<td>Lab Operator/Chemistry/Scrubber</td>
<td>4</td>
<td>Chem Tech</td>
<td>14</td>
<td>Medium</td>
</tr>
<tr>
<td>Maintenance Supervisor</td>
<td>2</td>
<td>Maintenance Supervisor</td>
<td>3</td>
<td>Medium</td>
</tr>
<tr>
<td>Mechanical Craft</td>
<td>12</td>
<td>Mechanical Craft</td>
<td>21</td>
<td>Low</td>
</tr>
<tr>
<td>I&amp;C Craft</td>
<td>9</td>
<td>I&amp;C Craft</td>
<td>10</td>
<td>Medium</td>
</tr>
<tr>
<td>Electrician Craft</td>
<td>5</td>
<td>Electrician Craft</td>
<td>11</td>
<td>Low</td>
</tr>
<tr>
<td>Technician</td>
<td>11</td>
<td>Technician</td>
<td>13</td>
<td>Low</td>
</tr>
<tr>
<td>Security Officer</td>
<td>20</td>
<td>Security Officer</td>
<td>48</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td><strong>93</strong></td>
<td></td>
<td><strong>165</strong></td>
<td></td>
</tr>
<tr>
<td>All Other Positions</td>
<td>14</td>
<td></td>
<td>72</td>
<td>Medium</td>
</tr>
<tr>
<td><strong>Total On-Site Positions</strong></td>
<td><strong>107</strong></td>
<td></td>
<td><strong>237</strong></td>
<td></td>
</tr>
<tr>
<td>Possible Centralized Positions</td>
<td></td>
<td></td>
<td>33</td>
<td></td>
</tr>
<tr>
<td><strong>Total Positions</strong></td>
<td></td>
<td></td>
<td><strong>270</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: SM Analysis, Nu-Scale
Why are SMRs a Good Replacement?

Jobs By the Numbers (Cont’d)

Jobs for a Generation

- **SMR**: Construction, 1600; Permanent, 270
- **Natural Gas**: Construction, 800; Permanent, 30
- **Wind**: Construction, 688; Permanent, 80
- **Solar**: Construction, 1800; Permanent, 36


SMR jobs are locally concentrated
Why are SMRs a Good Replacement?

Other Benefits

Clean Energy

Leveraging Valuable Site Assets

Trade Opportunities

Source: SM Analysis, EPA
### Why are SMRs a Good Replacement?

#### But Why Not Other Options?

<table>
<thead>
<tr>
<th>Carbon-Free Energy?</th>
<th>Role on Grid</th>
<th>Benefits Concentrated in Local Community?</th>
<th>Permanent Jobs on Site</th>
<th>Industry Wage Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Solar</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Wind</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Nuclear</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Coal</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

- **Nuclear**: $41.32, 237 jobs
- **Coal**: $33.64, 107 jobs
- **Wind**: $25.95, 80 jobs
- **Solar**: $24.48, 36 jobs
- **Natural Gas**: $34.02, 30 jobs
ScottMadden Generation Focused Research

- Gone with the Steam
- Bitcoin and Nuclear Power
- Build Your Own Texas Generation Mix
- While You Were Sleeping
THANK YOU

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