

# OYSTER CREEK

## The World's Reactors No. 40

<b>OWNER</b>	Jersey Central Power & Light Co.
<b>LOCATION</b>	Ocean County, New Jersey, U.S.A.
<b>TYPE</b>	Forced circulation, direct cycle, BWR
<b>OUTPUT</b>	515 MW(e) net 1 600 MW(th)
<b>PRIME CONTRACTOR</b>	General Electric Company
<b>ENGINEER-CONSTRUCTOR</b>	Burns & Roe Inc.
<b>START-UP CORE</b>	1967 Equivalent diameter: 160.2 in Circumscribed diameter: 170.5 in Heat transfer area: 49 200 ft <sup>2</sup> Channel material: Zircaloy
<b>FUEL</b>	Material: Enriched UO <sub>2</sub> Average burn-up: 16 500 MWd/t (initial core) 22 000 MWd/t (equilibrium core) No. of assemblies: 560 Assembly weight (including channel): 687 lb No. of rods per assembly: 49 Rod outside diameter: 0.570 in Active length: 144 in Cladding material: Zircaloy Cladding thickness: 0.036 in
<b>CONTROL</b>	No. of control blades: 137 Control rod poison material: Boron carbide No. of temporary control curtains: 248 Curtain material: Boron-stainless steel
<b>MODERATOR/COOLANT</b>	Demineralized light water Reactor steam output: 5 855 000 lb/h Recirculation flow rate: $61 \times 10^6$ lb/h Pressure: 1 000 psig
<b>PRESSURE VESSEL</b>	Inside diameter: 17 ft 9 in Overall inside height: 63 ft 10 in Wall thickness: 7.125 in Material: Carbon steel Cladding material: Stainless steel Cladding thickness: 0.157 in Design pressure: 1 250 psig
<b>RECIRCULATION LOOPS</b>	Number: 5 Pipe outside diameter: 26 in Pump capacity: 32 000 gal/min each Pump type: Centrifugal, mechanical seal Feed water temperature: 150°C
<b>TURBINE GENERATOR</b>	Number: 1 Type: Tandem-compound, six-flow, reheat Turbine inlet pressure: 965 psia Turbine exhaust pressure, 1.0 in Hg abs Speed: 1 800 rpm Generator rating at 0.8 p.f.: 625 000 kVA Voltage: 24 000 V Gross output: 540 MW(e)

### KEY

- |   |                              |                                       |
|---|------------------------------|---------------------------------------|
| 1. Service Crane and Hoist                              | 15. Spent Fuel Storage Racks | 29. Drywell Shielding                 |
| 2. Equipment Storage Pool (Steam Dryers and Separators) | 16. Steam Outlet             | 30. Drywell Containment Vessel        |
| 3. Reactor Service Platform                             | 17. Steam Separators         | 31. Drywell                           |
| 4. Removable Shield Plugs                               | 18. Feedwater Inlet          | 32. Personnel and Equipment Hatch     |
| 5. Removable Top Shields                                | 19. Fuel Element Assemblies  | 33. Ducts from Drywell to Suppression |
| 6. Safety Valve   | 20. Control Blades           | 34. Vacuum Breaker                    |
| 7. Pressure Vessel Head                                 | 21. Fuel Support Grid        | 35. Distribution Header               |
| 8. Steam Dryers   | 22. Reactor Pressure Vessel  | 36. Vent Pipes                        |
| 9. Double Seal  | 23. Recirculation Outlet     | 37. Suppression Water Pool            |
| 10. Isolation Condensers                                | 24. Recirculation Inlet      | 38. Pressure Suppression Torus        |
| 11. Reactor Building                                    | 25. Control Rod Drives       | 39. Central Control Room              |
| 12. Fuel Handling Grapple                               | 26. Control Rod Drive Piping | 40. Turbine Building                  |
| 13. Fuel Service Platform                               | 27. Recirculation Pumps      | 41. Turbine Generator                 |
| 14. Fuel Storage Pool                                   | 28. Shutdown Heat Exchangers | 42. Turbine Service Crane             |

