

# Elements

An International Magazine of Mineralogy, Geochemistry, and Petrology



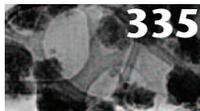
Volume 2, Number 6 • December 2006

## The Nuclear Fuel Cycle Environmental Aspects

Rodney C. Ewing, Guest Editor



**The Nuclear Fuel Cycle: A Role for Mineralogy and Geochemistry**  
Rodney C. Ewing



**Uranium Mill Tailings: Geochemistry, Mineralogy, and Environmental Impact**  
Abdesselam Abdelouas



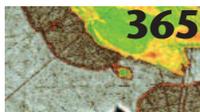
**Spent Nuclear Fuel**  
Jordi Bruno and Rodney C. Ewing



**Uranium Mineralogy and Neptunium Mobility**  
Peter C. Burns and Amanda L. Klingensmith



**Nuclear Waste Glasses – How Durable?**  
Bernd Grambow



**Ceramic Waste Forms for Actinides**  
Gregory R. Lumpkin

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**ABOUT THE COVER:**  
The San Onofre Nuclear Generating Station consists of three units built near California's San Onofre State Beach, approximately 100 km south of Los Angeles. It produces enough power for 2.2 million households or about 20 percent of southern California's energy needs. Unit 1 was commissioned in 1968 and ceased operation in 1992, and is currently being decommissioned. In August of this year, elevated concentrations of tritium were reported in the groundwater beneath Unit 1. Units 2 and 3 were commissioned in 1982 and 1983, respectively, and are still operating with a combined capacity of 2 GW(e). Their licenses expire in 2022. Spent nuclear fuel from all three units is stored on site in pools of water and dry casks.  
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