

# FRENCH NUCLEAR REPROCESSING: DECLINE AT HOME, COUP d' ETAT IN THE UNITED STATES

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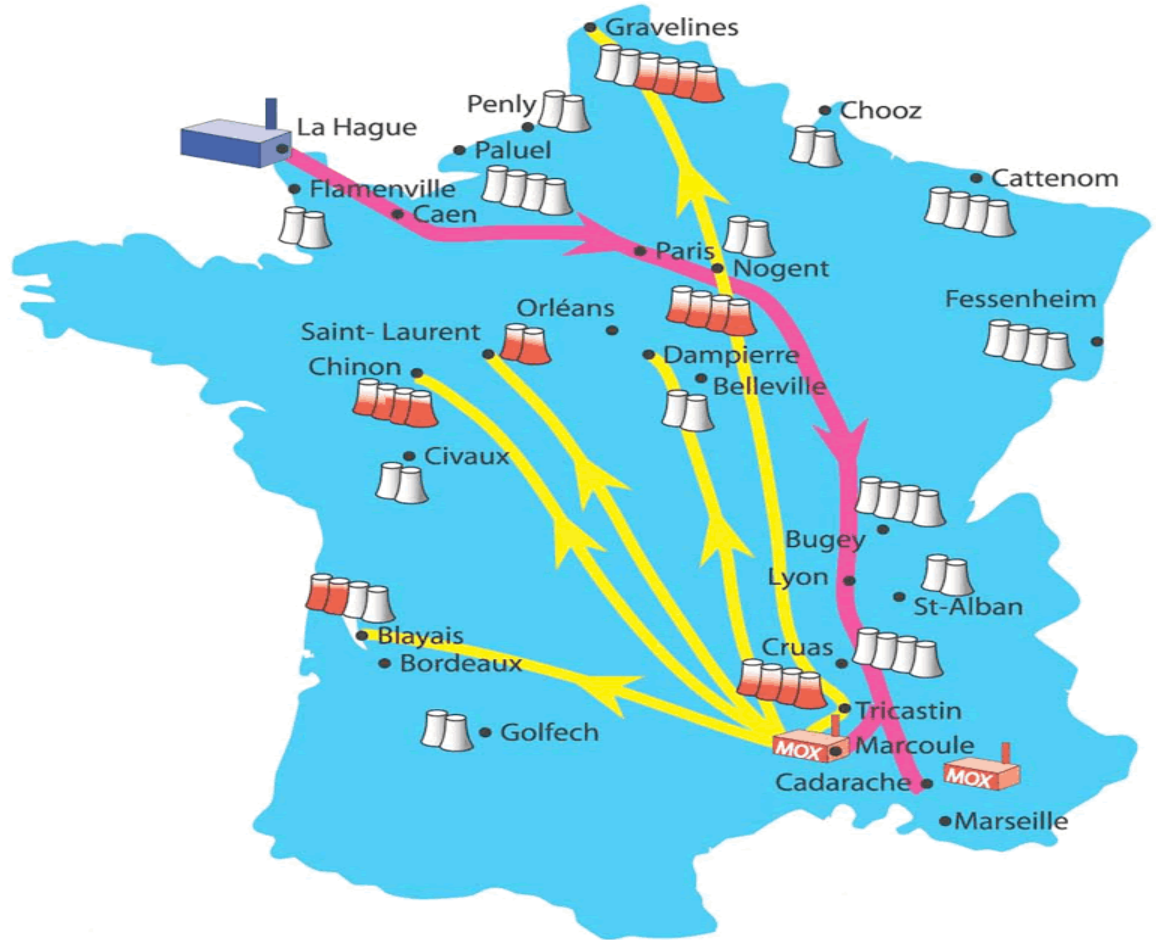




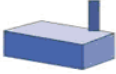
# THE MYTHOLOGY OF FRENCH REPROCESSING




- GOOD ECONOMICS
- SOLVES N WASTE PROBLEM
- NO ENVIRONMENTAL IMPACT
- PROLIFERATION PROOF
- U.S. NEEDS FRENCH APPROACH

# The French system

- AREVA/COGEMA – la Hague reprocessing plants
- EDF – STATE ELECTRICITY MONOPOLY
- BREEDER RESEARCH – CEA – Marcoule and Cadarache



-  Réacteur à eau sous pression (REP)
-  REP chargé en MOX (max. 30%)
-  Usine de retraitement

-  Usine de fabrication de MOX
-  Transport routier de MOX frais
-  Transport routier de rebuts de fabrication de MOX

# In France, the Market Does Not Exist

- Centrally planned economy – unique in the EU
- Active resistance to liberalization
- Costs hidden
- Foreign clients opt out

# Charpin Report, 2000

- *"The extra cost associated with reprocessing and MOX (mixed-oxide) fuel fabrication, compared to direct fabrication of UO<sub>x</sub> (uranium oxide) fuel fabrication (from enriched uranium) is not offset by savings of natural uranium through plutonium use (or savings) resulting from reduction in the direct cost of disposing of final wastes," the experts wrote. "In other words, this strategy, from the viewpoint of the utility, represents an increase in the cost of a kilowatt-hour, which appears as an obstacle to its competitiveness, an element that is increasingly intolerable in (an electricity) market opening to competition." Charpin to Prime Minister 2000*

# Charpin report conclusions

- Reprocessing and MOX fuel use are uneconomical and will remain so for the foreseeable future;
- Reprocessing and MOX fuel use will contribute little to the reduction of the inventory of the transuranic radionuclides in waste, including plutonium.

# Today

- US\$25 billion penalty
- AREVA and EDF protected from market reality
- European clients end reprocessing
- EDF bound by law, storage problems and vested interests

# AREVA's NEED FOR \$\$

- La Hague operating at 50 % capacity
- Foreign clients opt out of reprocessing
- Areva under pressure – Finland and Ukraine
- Uncertainty with China
- US spent fuel market – biggest in world

- Waste problem magnified
- Contamination – widespread and spreading
- Myth of ‘recycling’
- High level waste – no disposal
- Spent MOX – 150 years of storage
- Discharges and health

Relativisons...



*« Le site de la Manche, après vingt-cinq ans de bons et loyaux services, figure désormais comme une référence technique internationale dans le stockage des déchets [...] »*

Le commissariat à l'énergie atomique, Découvertes Gallimard / CEA, 1995.



Stockage en pleine terre



Coque bétonnée fissurée

Ces photos transmises anonymement ont été prises à l'intérieur du Centre de Stockage de la Manche durant la phase d'exploitation

# And Proliferation

- Technology and Materials exported globally – from Iraq and Israel to Korea, Japan and China ?
- France opposed to decades long US policy
- Therefore overturn US policy

# The French GNEP

- France 30+ year domestic GNEP
- The result:
- Billions wasted in failed commercial FBR
- No real experience with reprocessing technology design – beyond PUREX
- 60 tons of separated plutonium – no use
- Export of technology and materials to North-east Asia – Japan, Korea and China?

# AREVA'S COUP d'ETAT

## EVIDENCE FROM FRANCE:

- **REPROCESSING IS EXPENSIVE**
- **CONTRARY TO LIBERALIZED ELECTRICITY MARKET**
- **CLIENT BASE SHRINKING**
- **WASTE PROBLEM IGNORED FOR DECADES – NO SOLUTION**
- **FAST REACTOR FAILURE**
- **PLUTONIUM AND TECHNOLOGY PROLIFERATE**
- **VESTED INTERESTS MAINTAIN STATUS QUO**

# AREVA's COUP d'ETAT

- AREVA's reprocessing business runs counter to U.S. and global non-proliferation interests
- Despite AREVA's track record, it has undertaken a coup d'etat at the US Department of Energy
- Time to recognize, challenge and overturn
- Starting in Congress