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**Directorate of
Intelligence**

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Science and Weapons Review

**Tuesday
5 November 1991**

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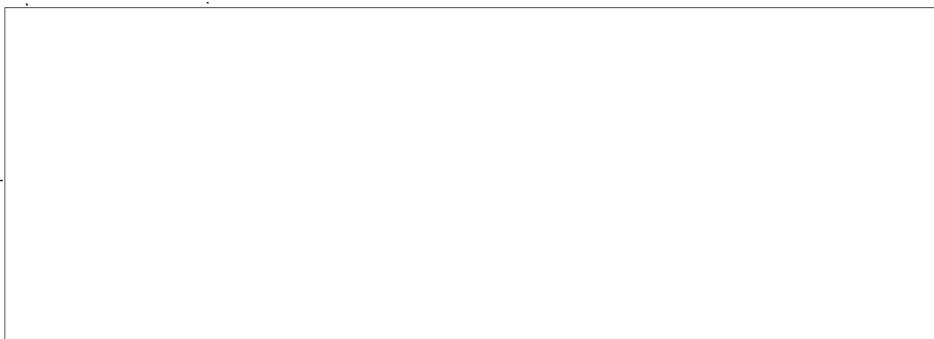
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Science and Weapons Review

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Office of Scientific & Weapons Research

Tuesday, 5 November 1991

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USSR: Fires at Chernobyl' Increase Pressure To Close Soviet-Designed Reactors

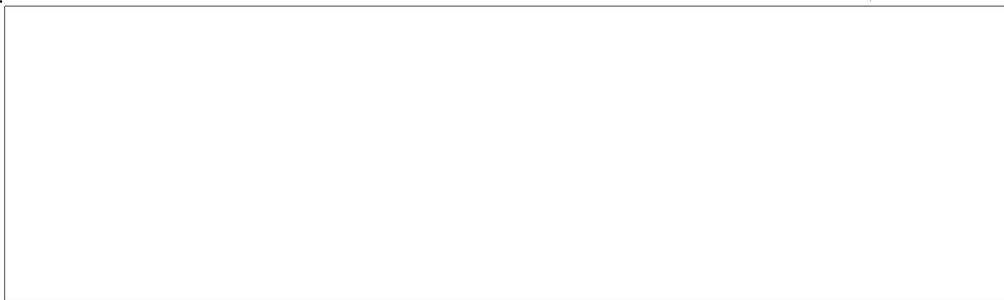
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Fires at the Chernobyl' nuclear power station on 11 October and 1 November, reported by TASS, have increased pressure on Ukrainian authorities to close the station's older reactors. Replacing the electrical output of Chernobyl' will be problematic for the Ukraine, given its coal and oil supply difficulties. 

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USSR

Fires at Chernobyl' Increase Pressure To Close Soviet-Designed Reactors



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THERE HAVE BEEN two fires within the last month at the Chernobyl' nuclear power station. The first, caused by the failure of an electrical switch, occurred late on the evening of Friday, 11 October 1991, at the Unit 2 reactor. According to TASS, the reactor was being shut down for maintenance when the switch reconnected one of the two generators to the electrical grid. As a result, the generator began to operate as a motor. The resulting very high current melted electrical connections, releasing and igniting the generator's hydrogen coolant. The fire rapidly spread to the roof of the generator hall, collapsing the roof over the affected generator (see figure). Some 300 firemen and 60 fire trucks battled the fire for over three hours. No radioactive material was released, and the Unit 2 reactor was safely shut down. The station's other two reactors were not affected and reportedly were in operation as of Sunday, 15 October.  (b)(3)

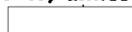
On 14 October a special commission led by Viktor Gladush, state minister of the Ukraine, arrived to investigate the accident. Also on 14 October, Vladimir Yavorivsky, chairman of the Ukrainian commission on the Chernobyl' catastrophe, called for immediate closure of the plant. On 16 October the Ukrainian "green" movement demonstrated in Kiev, announcing the beginning of an "active struggle to have the Chernobyl' plant closed." According to local press reports, on 29 October the Ukrainian parliament decided not to restart the damaged number 2 reactor and to advance the shutdown of the other two reactors from 1995 to 1993.  (b)(3)

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On 1 November 1991, the Ukrainians announced a second fire, this time at the Unit 1 reactor. This fire also involved the generator hall but apparently was much smaller and was quickly extinguished by the station's fire crew. No radioactive material was released. Unit 1 reportedly had been shut down for scheduled maintenance when the fire occurred. 

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Comment:

These accidents will increase the pressure on nuclear authorities in Russia, the Ukraine, Lithuania, Bulgaria, Hungary, and Czechoslovakia to shut down all reactors that do not meet the high safety standards required in the West. The 11 October fire was one of the most serious accidents and certainly the most photogenic since the fourth reactor at Chernobyl' was destroyed in an accident in 1986. Had emergency response personnel been unable to contain the fire, essential equipment could have been destroyed, leading to fuel melting and release of radiation. The enormous scale of the 1986 accident, however, almost certainly could not have been repeated. 

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Despite intense popular pressure to close all reactors at the plant immediately, the economic value of its output is forcing Ukrainian authorities to adopt a more measured shutdown plan. While still a net exporter of electricity, the Ukraine relies on imports from Russia for over 40 percent of its fuel needs. Disruptions in these supplies, combined with falling coal production, prompted officials in September to restrict electricity use by 15 percent. Viktor Gladush, in a 15 October press conference, cited extremely limited organic fuel resources and emphasized what he characterized as the fairly substantial social damage caused by the loss of Unit 2's 700 megawatts of generating capacity. Gladush gave kudos to the plant operators, emphasizing that in the 11 October accident, unlike the 1986 accident, the public was kept fully informed and station personnel acted efficiently, decisively, and confidently. 

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The cost of repairing the extensively damaged turbogenerator in light of the rescheduled shutdown in two years probably accounts for the reported decision not to restart Unit 2. The future status of Unit 1 in the wake of


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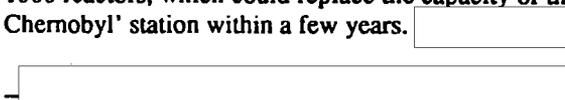


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the 1 November accident is presently unclear, but the reactor probably will return to operation if the damage is not extensive. Replacing the electrical output of the Chernobyl' station will be problematic for the Ukraine, given its coal and oil supply difficulties. The current moratorium on completing new nuclear power plants,

enacted by the Ukrainian legislature last year, prevents using three modern, considerably more safe VVER-1000 reactors, which could replace the capacity of the Chernobyl' station within a few years.



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