

CHERNOBYL AND NUCLEAR POWER IN THE USSR

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David R. Marples

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August 1986

Introduction

The Chernobyl nuclear disaster marks a watershed in the history of the world nuclear power industry. The accident in the northern reaches of Ukraine received world attention as soon as the radiation cloud that resulted drifted over Scandinavia. The Soviet authorities, who had not divulged any news about the accident two days after the event slowly began to release information. In the meantime, Western press agencies began to speculate, sometimes wildly, about what had taken place and the number of casualties that may result. At the time of writing, there have been no firm conclusions about the causes of the accident, although it seems clear that it was a result of both technological problems and human error.

This book analyzes the Soviet nuclear power industry. In origin, it predates the Chernobyl accident, but inevitably its format has been determined by that event. It seeks the answers to several pertinent questions. First, why have the Soviet authorities committed themselves so heavily to the development of nuclear energy, given that the USSR is one of the only two countries in the world that can lay claim to a energy self-sufficiency? Second, has the speed with which the industry is being developed led to the neglect of the safety of citizens and the environment? Is there, for example, a well-documented history of neglect and general safety problems at Soviet nuclear power plants?

Third, is Chernobyl representative of the nuclear power industry in the USSR? Are there nuclear plants in a similar condition, facing similar dilemmas with supply and a lack of qualified and a surplus of dissatisfied workers? If so, does the Soviet industry constitute a living danger for the world at large? Finally, what will be the long-term effects of the accident, both on the immediate environment, for agriculture, and for the Soviet energy programme? Can the build-up of nuclear power continue

under the new and difficult circumstances both in the Soviet Union and in Eastern Europe, where a Soviet-run plan has been implemented?

In beginning this study, the author decided to limit himself largely to Soviet source materials. In his view, it is possible to glean enough information therein to make adequate conclusions about various facets of the industry. It should be stated at the outset that the object is not to judge or condemn the USSR, or to make any kind of political comment, but to analyze an industry that has remained shrouded in secrecy since its inception in the USSR in 1954. Moreover, the author's sphere of expertise pertains to the Soviet economy rather than nuclear physics. Thus in some sections, where specialized technical information is required, he has been obliged to rely on the information of scientists in the field.

The volume cannot provide a definitive account of either the Soviet nuclear power industry or of the Chernobyl disaster in particular. Both are still in progress. Its aim is rather to elucidate some of the important issues; to show how the disaster affected Soviet thinking; and to look at its impact on the lives of ordinary citizens.

The author is also of the view that one cannot discuss Chernobyl without some understanding of its setting: the Ukrainian SSR and the role assigned for Ukraine in the Soviet nuclear programme, both for domestic and East European supplies of electricity. Ukraine's nuclear power build-up has taken an extreme form. Immense pressure has been placed on local officials to comply with ambitious development plans. Ukraine has remained one of the most important economic regions of the USSR, but in several key spheres, its industries have stagnated or declined in output: coal, steel and chemicals being the most important. For Ukrainian officials, nuclear power represented a way out of an impasse, a passport to an enterprising future.

Consequently, while this book comprises a study of the Soviet nuclear power industry in its entirety, the emphasis is on the Ukrainian scene. Ukrainians in the West have catalogued Chernobyl as another chapter in a sad twentieth-century history that includes a man-made famine in 1932–3, the Stalinist purges of the 1930s, and many of the major conflicts of the German-Soviet war of 1941–5. At no point therefore should it be forgotten that the disaster took place on Ukrainian territory, and moreover, within the vicinity of an old historical town dating back to the late twelfth century: Chornobyl. Because of the publicity accorded to the Russian form of the name, this work uses "Chernobyl" throughout. The same also applies to Kiev and to the Dnieper River. In all other instances, however, the names of Ukrainian officials, town and villages are given in their Ukrainian form.

The book is divided into seven chapters. The first looks at one of the significant episodes of the whole affair, namely how the Soviet author-

ities released information about the accident over the first three weeks. The author's view is that while an apparent reluctance to release hard information can hardly be termed untypical for the Soviets, it shows nonetheless how much was at stake for the authorities in the economic sphere. Whether reports took the form of a news report from the site itself, a speech by Mikhail Gorbachev, or an *Izvestiia* correspondent's denunciation of the West followed by a listing of "accidents" at nuclear power plants outside Eastern Europe, the goal was the same: to avoid prejudicing the future of nuclear power in the USSR.

Chapter Two looks at the energy questions facing the Soviets, and why planners feel that the country can no longer rely on supplies of coal and oil to fuel the Soviet power industry. Chapter Three focuses attention on Eastern Europe and its part in the overall nuclear energy plan, especially its links with the Ukrainian SSR in the Council for Mutual Economic Assistance (CMEA). It examines the immediate impact of the Chernobyl disaster on nuclear power in Eastern Europe.

Chapter Four examines nuclear power development in the USSR in the Tenth and Eleventh Five-Year Plans (1976–80 and 1981–85 respectively) and looks at the prospects for the Twelfth Five-Year Plan and to the year 2000. It outlines Ukraine's part in this plan and provides a history and picture of recent developments at the individual stations in Ukraine. The object is to show that there were many common dilemmas at the time of the accident, including supply problems, defective materials, severe labour problems, alcoholism, and the shortage of qualified personnel. Chapter Five applies this scenario to the USSR as a whole, in somewhat broader perspective by analyzing the question: are Soviet nuclear power plants inherently unsafe?

The final two chapters focus on the accident itself and its aftermath. They portray the background of the Chernobyl station and the details of the first hours of the accident. An analysis is provided of the evacuation procedure, the clean-up campaign and the political repercussions of the tragedy. The extent and possible effects of radiation are also encompassed, while background information is provided on some of the officials leading the campaign "to eliminate the consequences of the accident" (to use Soviet parlance). Lastly, the author looks at the future of the nuclear industry and the impact of Chernobyl from a world dimension. Nuclear power cannot be confined within state borders and if it is to continue as a leading energy source, then it seems clear that even a totalitarian society must assent to some form of international control. The question is how thorough and how complete can that scrutiny be?

In 1984-5, the author was an employee of the U.S. radio station, Radio Liberty, in Munich. While there he was able to collect a copious amount of information on the Soviet nuclear power industry, culled from jour-

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nals, newspapers and staff resources. As a repository of Soviet sources and of current information, Radio Liberty and its sister station, Radio Free Europe, are probably unmatched in the Western world. He relied also on the extensive newspaper resources of the Canadian Institute of Ukrainian Studies at the University of Alberta. Technical assistance was provided by employees of Atomic Energy of Canada Limited.