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RECENT BIBLIOGRAPHY ON ANALYTICAL AND SAMPLING PROBLEMS OF A PWR PRIMARY COOLANT

Hungarian Academy of Sciences

CENTRAL RESEARCH INSTITUTE FOR PHYSICS

BUDAPEST

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C O N T E N T S

INTRODUCTION

There are many complex tasks to be solved in connection with the PWR-type nuclear plant now under construction in Paks, Hungary. Some of these tasks are related to the primary coolant, namely the /gas/ analysis and sampling of the primary water circuit.

The safe operation of a nuclear plant requires the permanent control of the primary coolant; this control is based on the analysis of water from the primary circuit.

It is recommended that this analysis be performed as follows:

1. analysis of the gases dissolved in the water,
2. monitoring of radiating substances,
3. examination of the chemical compounds conditioning the primary coolant /boric acid/,
4. study of soluble and insoluble corrosion products.

In the framework of this bibliography, we had no intention of studying the enormous background work connected with corrosion products, our aim solely being to collect the analytical methods dealing with dissolved gases in water causing corrosion; these are included in point 1. above.

Bearing in mind the high pressure and temperature in the primary circuit, we also took into account the sampling and preparation.

During the compilation of this bibliography, we set out to acquaint ourselves with the relatively new methods. For this reason, we investigated the literature in the above-mentioned field published in the last 8-10 years; exceptions were made, ie. earlier works were cited, only where it was absolutely essential.

Collection of the literature data was closed in Februrary, 1980.

The bibliography is arranged in alphabetical order by topics. Within each topic the references are listed alphabetically according to the name of the first author of each work.

Works are in English unless otherwise marked.

Cross-referencing was not intended.

LIST OF SYMBOLS

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B	boric acid	5
Cl	chlorine, chloride	7
CO_2	carbon dioxide	8
G	general	8
GA	gas analysis	9
H	hydrogen isotopes: hydrogen, deuterium, tritium	12
I	iodine, iodide	14
N	nitrogen	15
NG	noble gases	16
NH_3	ammonia	16
NMT	nuclear measuring technology	17
O	oxygen	18
OE	other elements	19
RM	radiation monitoring	20
RS	reactor safety	21
S	sampling and preparation	22
SEP	separation of fission products	23
WCh	water chemistry	24

Cz	in Czech
F	in French
G	in German
H	in Hungarian
J	in Japanese
R	in Russian
S	in Spanish
Sl	in Slovakian

IAEA-SM-	Int. Symp. of Atomic Energy, Publ. by IAEA, Vienna
PUAE	Peaceful Uses of Atomic Energy, Proc. 4th Int. Conf., Geneva, 6-16 Sept 1971 Publ. by IAEA-1-15 /1972/

GC	gas chromatography
GSC	gas-solid chromatography
HPLC	high performance liquid chromatography
PWR	pressurized water reactor

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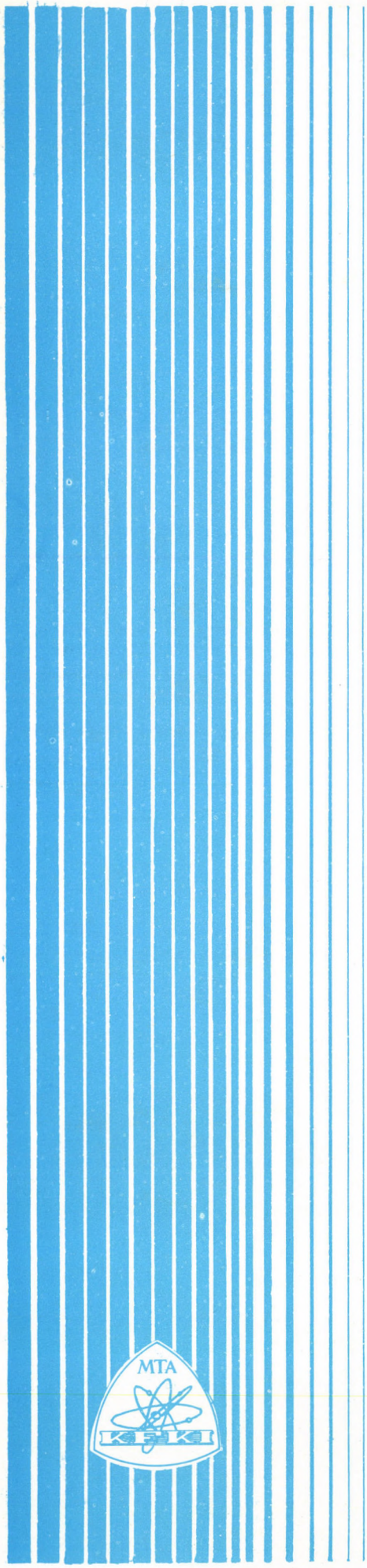

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