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人权委员会
第四十九届会议
议程项目14

人权和科学技术发展

南斯拉夫联邦共和国常驻联合国日内瓦办事处代表
1993年3月2日致主管人权事务副秘书长的信函

关于人权委员会本届会议议程项目14“人权和科学技术发展”，我有幸在此附上一份题为“遭受战祸影响的克罗地亚地区的放射性废物管理”。该报告是克罗地亚政府编写的，准备提交1993年2月28日至3月4日在亚利桑那州图森举行的93年废物管理专题讨论会：“HLW、LLW、混合废物和环境恢复---为一个更清洁环境奋斗”。

该专题讨论会由以下组织主持和发起：美国原子能协会、美国能源部、新墨西哥州立大学、废物管理教育研究联合社(WERC)、美国机械工程师协会、(放射性废物)、系统委员会、以及一些商业组织。 讨论会是同国际原子能机构合作组织的。

根据这份报告，可以看出，克罗地亚政府打算在大多数、甚至全部人口为塞尔维亚人的地区向外国公司出售放射性和其他有毒废物倾倒场所的特权。一部分有关领土已于去年由联合国保护部队进驻保护，(见图3： Petrova 山、 Trgvoska山、Zrinska 山、Bilogora 山、Msalovacka 山、Paunj 山、Papuk 山、Krodija 山、

Pozeska 山、Dilj 山、Krodija 山)。幸好这段时间，克罗地亚不能在这地区执行其倾倒废物的计划。另一方面，有人在西斯拉沃尼亚(即万斯计划指定为克罗地亚西区)进行了绝对秘密的工作，由此判断， 非常可能放射性废物已贮藏在这些地方。

克罗地亚政府在努力实现其长期以来梦寐以求的恶毒念头，划出一个经“种族清洗”过、没有塞尔维亚人的克罗地亚， 正危及本国以外欧洲其他国家公民的生存。

一旦克罗地亚政府的这些计划得逞，巴尔干和欧洲广阔地区将面临无法预料的生态灾难，因为无论从生态、地震或其他角度所选择的作为放射性和其他有毒废物倾倒场所的地区的地理和自然特征都根本不符合最低要求。

南斯拉夫联邦共和国将尽其权力，及时就这一问题向国际社会提供信息。我们希望国际社会能采取行动，帮助防止这一可怕计划的实现。

我谨请您将所附报告提交人权委员会第四十九届会议供参考。

临时代办，
Vladimi Pavicevic 大使
(签　名)

Preliminary Program

WM 93

"HLW, LLW, Mixed Wastes and Environmental Restoration — Working Towards A Cleaner Environment"

Hosted and sponsored by The University of Arizona, also sponsored by the American Nuclear Society, the U.S. Department of Energy, New Mexico State University and the Waste-management Education and Research Consortium (WERC), the Radwaste Systems Committee of the American Society of Mechanical Engineers and numerous commercial institutions. The conference is organized in cooperation with the International Atomic Energy Agency.

February 28 – March 4, 1993
Tucson, Arizona

WM Symposia, Inc.
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GENERAL INFORMATION

REGISTRATION--Registration will be held at the Main Lobby, TCC, Sunday, February 28, 1993 from 3:00 p.m. to 8:00 p.m. resuming every morning at 7:15 a.m. Technical registration includes four lunches, Sunday Reception, Wednesday Banquet and one copy of the published proceedings. Advance registration is recommended.

SUNDAY RECEPTION AND REFRESHMENTS--Sunday, February 28, 1993 from 5:00 p.m. to 8:00 p.m. in the Crystal Ballroom, TCC. Hosted by NUS Corporation, US Ecology, Inc., and JGC Corporation of Japan.

REFRESHMENTS--Drinks and pastries will be served before the sessions and during breaks in the Exhibition Hall while exhibits are open at other times in the vicinity of the sessions. Tea and scones sponsored by BNFL Inc.

EXHIBITION RECEPTION--Monday and Tuesday, March 1 and 2, 1993, 4:00 p.m. - 5:30 p.m., Exhibition Hall, TCC. Tuesday reception is a Minifiesta sponsored by Lockheed.

SECOND POLISH-RUSSIAN ROCK'N'ROLL PARTY--Tuesday, March 2, 1993, 5:30-7:30 p.m. in the Holiday Inn Starlight Lounge and Patio. Celebrating the 5th anniversary of the Weapons Complex Monitor and the inauguration of the Post Soviet Weapons Complex and Business Monitor Publications.

ADVISORY COMMITTEE BANQUET AND PARTICIPANT MIXER--A choice will be offered from four banquets on Wednesday, March 3, 1993 from 6:00 p.m. to 11:00 p.m. These are: Old Tucson (western), Old Tucson (swinging jazz), Gaslight Theater, and racing at the Dog Track. The Gaslight is limited to 225. (Priority on registration date). Sponsors of the banquets, mixer & refreshments are:

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WASTECHEM/ENSR
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WEDNESDAY, MARCH 3, 1993 AM

8:30 AM--XXV. Packaging and Transportation of Radioactive Materials
Co-chair: Albert E. Castagnacci, Duquesne Light;
Larry Blalock, USDOE-HQ
SO(s): Richard Yoshimura, SNL;
David Boyer, Ian Porter, BNFL

1. Roadmaps: EM's Issue-based Planning Process and How It Supports Transportation Management's Critical Mission-Pat Noblett, Dick Redmond, Audrey McAllister, Nick Suttora, EDM; Larry Blalock, Gerald Boyd, USDOE
2. From DAD to TRAIN: Evolution of State-Federal Relations in Radioactive Waste Transportation-Max S. Power, WA Dept. of Ecology; Bob Robison, OR Dept. of Ecology; Douglas Larson, Jim Miernyk, WSEB
3. LSA & SCO Determinations Key to Managing Low Level Wastes-Dennis L. McCall, WHC
4. Millstone Steam Generator Packaging, Shipment, and Disposal-James Braun, CNSI
5. Tracking Low-Level Radioactive Waste on a Nationwide Scale: Complications and Considerations-Michael Klebe, IL Dept. of Nuc Safety; N. Richard King, RMC
6. The WIPP Transportation System-Refinement in Motion-T. R. Ward, WEC; R. Spooner, USDOE
7. Potential Economic and System Advantages of the Introduction of a Short Legal Weight Truck Cask System into the Federal Waste Management Transportation System-R.W. Peterson, E.J. Bentz, Jr., C.B. Bentz, E.J. B & A
8. Irradiated Fuel Transport-Two Decades of European Experience-L.G.T. Panton, NTL (UK)

8:30 AM--XXVI. Progress in HLW Characterization, Pretreatment and Solidification
Co-chair: Len Sjostrom, USDOE-SR;
Gary Bracken, USDOE-RL
SO(s): Ned Bibler, SRL
Dick Sills, BNFL

1. Characterization of High Level Waste Concentrate-R. Berg, U. Schaarschmidt, M. Weishaupt, D. Fang, WAK (GERMANY)
2. Installation, Start-up, and Operation of a PUREX High-Level Waste Sludge Mobilization and Wash System at the West Valley Demonstration Project-M. A. Schifthauer, S.C. Thompson, WVNS

WEDNESDAY, MARCH 3, 1993 AM

3. Action of Sodium Hydroxide Dilutions Upon the Properties of Actual and Simulated Double Shell Hanford Tank Waste-B.M. Rapko, Joel Tingey, Sam Bryan, PNL
4. Development of a Nitric/Formic Acid Process to Reduce Hydrogen Emissions During Sludge Treatment in the DWPF. Results with Simulated and Actual Radioactive HLW Sludges Containing Noble Metals-C.W. Hsu, D.M. Ferrara, N.E. Bibler, B.C. Ha, J.A. Ritter, WSRC
5. Calcination of HLW with High Aluminum Content by Low Temperature Plasma-A.S. Aloy, V.Z. Belov, A.V. Stelnokov, Radium Institute (RUSSIA)
6. Laboratory-Scale Vitrification and Leaching of Hanford High-Level Waste for the Purpose of Simulant and Glass Property Models Validation-E. V. Morrey, M.L. Elliott, J.M. Tingey, PNL
7. Leaching of Borosilicate Glasses Incorporating Simulated High-Level Radioactive Wastes Using Draft ASTM (PCT) Procedure-Horsh K. Manaktala, Prasad K. Nair, SWRI
8. Statistical Acceptance of West Valley HLW Glass-A. Drobot, J.L. Mahoney, WVNS

8:30 AM--XXVII. Status of Nuclear Waste Programs-Part I
Co-chair: Earl McDaniel, ORNL;
Candace Chan, IAEA
SO(s): Earl McDaniel, ORNL;
Candace Chan, IAEA

1. Waste Management and Disposal Strategies in IAEA Member States with Nuclear Power Programmes-D.J. Squires, PNL; C.Y. Chan, IAEA (USA/AUSTRIA)
2. Strategy Selection for Management and Rehabilitation of Contaminated Territories in Republic Belarus-V.M. Efremenkov, SCC (BELARUS)
3. Present Practices and Innovative Treatments Developed in Solid and Liquid Waste Management in India-M. Ramaswamy, I.J. Singh, S.K. Samanta, P.K. Wattal, BARC (INDIA)
4. Deep Repository Development-Progress in the UK-H. Beale, C.S. Mogg, UK Nirex (UK)
5. Nuclear Waste Program in Ukraine-L. Bogdan, H. Mykolaychuk, (UKRAINE)

6. Laguna Verde Station Approach to Nuclear Waste-Augusto Vera, CFDE (MEXICO)

7. The Radioactive Waste Management in the Areas of Croatia Affected by War-Damir Subasic, Antun Saler, Marijan Gunaric, Mladen Novakovic, CRMA (CROATIA)

8. Design and Licensing of the El Cabril LLW Disposal Facility-Carmen Ruiz, CSN; Pablo Zuloaga, Josus Alonso, ENRESA (SPAIN)

1:30 PM--XXVIII. Education, Training and Technology Transfer
Co-chair: Margery Olson, SAIC;
Ron Bhada, WERC
SO(s): Margery Olson, SAIC;
Albert E. Castagnacci, Yankee Atomic

1. EM Five-Year Plan Education Initiatives: Bringing Students into the Planning Process-Catherine Volk, USDOE; L. James, SAIC

2. Selling Cleanup Technologies to the Public: Watch Out for the Car Salesman Mentality--It Doesn't Work-Brenda Flory, WCM; Edward Helminski, Exchange Publications

3. Transferring Federally-Funded Technologies: New Strategies for Success-Erik J. Stenehjem, PNL

4. The Environmental Fair: Oak Ridge's Success Story in Educational Outreach-Gail E. Rymer, MMES

5. Multiple Regulation Training: Integrating a Mixed Bag of Mixed Waste-Gregory B. Hayward, KE; James E Gamin, WHC

6. Training and Qualification of Waste Management and Remedial Action Personnel at the Oak Ridge National Laboratory-A.F. Frederick, ORNL

1:00 PM--XXIX. Poster-Defense High-Level Waste
Co-chair: Harry Babad, WHC;
George Mellinger, USDOE-HQ (PNL)

1. ICPP Waste Management Technology Development Program-G.W. Hogg, A.L. Olson, D.A. Knecht, WINCO; M. J. Jankoski, USDOE

2. Development of Waste Cost Manual for Savannah River Site-G.H. Street, B.K. Taylor, J.P. Harley, WSRC

3. Advancing the U.S. Department of Energy's Waste Tank Remediation Technologies Through the Underground Storage Tank-Integrated Demonstration Program-T.E. Gates, WHC

4. Study on the Colloids Generated from Testing of High-Level Nuclear Waste Glasses-Xiangdong Feng, E.C. Buck, C. Mertz, J.K. Bates, J.C. Cunnane, ANL

WEDNESDAY, MARCH 3, 1993 PM

5. Time and Motion Simulation of the WRAP Module 1 Facility-Kenneth D. Van Zanten, UE & C; John R. Weidert, WHC

6. 1/12-Scale Physical Modeling Experiments in Support of Tank 241-SY-101 Mitigation-James Fort, J.A. Bamberger, J.M. Bates, Carl W. Enderlin, PNL

7. Access and Isolation of Single Shell Tanks and Tank Farms-K. Wentzel, D. L. Russell, K&M Engr.; H.R. Johnson, W.K. Overbey, BDM

8. Low Temperature Aqueous Destruction of Organic and Ferrocyanide Contaminants in Hanford Tank Waste-E.O. Jones, H. Babad, L.R. Pederson, A.J. Schmidt, PNL

9. Remediation of Hanford Tank Waste Using Magnetic Separation-Laura A. Worl, Larry R. Avens, Karen J. de Aguero, F. Coyne Prenger, Walter F. Stewart, Dallas D. Hill, LANL

10. Development and Demonstration of the TRUEX Sovlent Extraction Process-George F. Vandegrift, D.B. Chamberlain, C. Conner, J. A. Dow, J.C. Hutter, R. A. Leonard, L. Nunez, D. G. Wygmans, J. Sedlet, J. M. Copple, B. Srinivasan, M.C. Regalbuto, S. Weber, M. Regalbuto, L. Everson, ANL

11. Chemical Oxygen Demand of Hanford Storage Tank Wastes: Information for Pretreatment and Tank Safety Issues-C.D. Carlson, PNL

12. Destruction of Organics and Decomposition of Nitrates in UST Wastes by Steam Reforming-Terry R. Galloway, ST; R.G. Dosch, J.L. Sprung, SNL

13. Decomposition of Tetraphenylborate Precipitates Used to Isolate Cs-137 from Savannah River Site High-Level Waste-D.M. Ferrara, N.E. Bibler, B.C. Ha, WSRC

14. Pretreatment Technology Development Activities for Resolving Hanford Tank Safety Issues-S.A. Colby, WHC

15. High-Level Waste Management and Treatment Program for Analytical Laboratory-A.G. King, R.T. Steele, D.L. Baldwin, K.A. Poston, PNL

16. Infrared Scanner Parametric Test Using Heated-Simulant Tank Waste-L.E. Efferding, WHC

17. An In Situ Characterization Tool for Waste Tank Materials Based on Raman Optical Scattering with Fiber Optic Probes-F.R. Reich, WHC

18. Integrated Instrument Platform for In Situ Characterization of Tank Wastes-S.J. Eberlein, WHC

SITE SELECTION OF RADIOACTIVE WASTE REPOSITORY IN THE REPUBLIC OF CROATIA

IZBOR LOKACIJE ODLAGALISTA RADIOAKTIVNOG OTPADA U REPUBLICI HRVATSKOJ

A.Saler

Javno poduzece za zbrinjavanje RAO
Savska cesta 41/IV
Zagreb, Croatia

ABSTRACT - The radioactive waste repository site-selection procedure in Croatia is divided into two stages: the first, related to the exculsionary screening of the national territory and comparision of potential areas in order to identify preferred sites acceptable for inclusion into the Regional Plan; and the second, comprising all necessary field investigations as well as additional site-characterization tasks planned to be worked out at a few preferred sites. Several potential areas, representing an interaediate goal of the first stage, are defined til nov.

SAZETAK - Postupak izbora lokacije odlagalista radioaktivnog otpada u Republici Hrvatskoj sastoji se od dvije faze: prva se odnosi na izlucno vrednovanje teritorija drzave i poredbenu analizu potencijalnih podrucja s ciljem identifikacije preferentnih lokacija prihvatljivih za uvrstavanje u Prostorni plan RH; dok se u drugoj fazi provode potrebna terenska istrazivanja, kao i dodatne aktivnosti predvidjene na dvije do tri najprikladnije lokacije. Do danas je utvrdjeno nekoliko potencijalnih podrucja, koja predstavljaju medjufazni cilj u iznalazenju preferentnih lokacija.

1. Introduction

The Republic of Croatia is faced with an actual problem -the final disposal of radioactive waste-that is closely related to some significant aspects of social life.Development of national economy and environmental preservation are most important of them

. The present quantities of radioactive wastes, generated from the various sources in Croatia-industry, medicine and scientific institutions- do not exceed 53 m3, but the Republic of Croatia is additionally obliged to repose a half of all wastes generated at the Krsko NPP. During the lifetime of this plant, sited in the Republic of Slovenia but being a joint venture of both the republics of Slovenia and Croatia, about 20.000 m3 of low-(LLW), intermediate-level (ILW) and decomissioning radioactive wastes are expected to be generated /1/. Hence, to construct a radioactive waste repository seems to be an inevitable duty of Croatia soon. But, in the same time, it presents a possible benefit for future development of an independent national economy as well. Of course, it should not be neglected that the environment, as a very precious resource, ought to be exploited only in accordance with conservative protection requirements, existing in the world practice.

2. Background

In order to select the radioactive waste repository site, attention should be paid to the repository design options and rock types available. The leading principle in both the objectives is to ensure the environmental safety, and not to save the money. Consequently, a tunnel-type repository in hard rocks seems to be the most acceptable repository design option in Croatia.Due to lack of flat areas having a solid, igneous or metamorphic lithology, as well as a lack of thick layers of clays or marls, the surface or shallow-ground disposal is hard to be expected. Since almost a half of Croatia is not convenient for repository siting due to prevailing karst (in the southern part of the country), and remaining flat areas are mainly unsuitable due to major acquifers having high water-table (along the rivers Sava, Drava and Danube); the regions of interest are the mountains in the interior. The most of them are horst-structures composed to a great extent of granite, gneiss and schists /2/. According to the results of available investigations, the horizontal tunnel, constructed at the slopes of these mountains, seems to be the most probable repository design option /3/.

3. Site Selection

3.1 Concept Description

The global concept of the Radioactive Waste Repository Project in Croatia includes a few main task groups being interferred. Besides Site Selection, it comprises Licencing Activities, Technology & Design Development,Safety Assessment, Economic Evaluation, Transportation Analysis and Waste Characterization. The whole project is supported by activities on Legislation Development.

Since there is an urgent economic need to ensure additional energy sources in Croatia, the site selection of thermo-electric -and nuclear power plants is being taken into consideration in the same procedure as well.

The Site Selection generally includes two stages: the first, site survey stage, terminating with inclusion of candidate sites into the Regional Plan of Croatia, and the second, site evaluation stage, aiming to define the final repository site through field investigations and other necessary actions.

At present, the first stage of the site selection is under way. It includes the actions that are extremely sensitive since defining of site selection methodology and criteria, as well as achieving political and public acceptance for repository siting have to be done before defining and including the candidate sites in to the Regional Plan. The planned activities are projected to be performed through two steps: (1) regional analysis and selection of potential areas; and (2) selection of preferred sites (Figure 1/.

Philosophy of the site selection is, at first, to define exclusionary criteria for the global reconnaissance of Croatia in order to find out potential areas. After comparative and additional exclusionary criteria are defined, potential areas will be subdued to more detailed evaluation aiming to identify a

number of potential sites. Through comparison of potential sites and their internal characterization, a few preferred sites are forseen to be find out. These preferred sites are supposed to be included into the Regional Plan of Croatia. In the second stage, detailed site investigations will be worked out at two or three preferred sites, resulting with identification of the final repository site.

In accordance with the above mentioned site selection performance, the aiming areas are defined as follows: potential areas represent larger areas (100-600 sq.km), characterized by acceptable isolation properties, potential sites are smaller areas (5-20 sq. km) derived from potential areas, having homogeneous structure favourable for siting radioactive waste repository, and preferred sites are small areas (2-20 sq. km), highly acceptable for the repository siting and able to be nominated for the Regional Plan /3/.

3.2. Description of the Performed Activities

The activities on radwaste repository site selection in Croatia began in 1988. Until Slovenia and Croatia have not been proclaimed as independent states, the preliminary activities on repository site selection in both republics (i.e. states) were being managed by the Inter-republic Co-ordination Commission in order to harmonize the site slection procedure in both countries. In Croatia, the Ministeries of Energy and Regional Planning, through the Croatian Electricity Management Board, committed to the institute for Urban Planning of Croatia to perform the study Site Screening, Investigation and Assessment of Site Suitability of Fossil Fuel power Plants and Nuclear Facilities on the Territory of the Republic of Croatia. The goal of the Study is identification of preferred sites for thermal- and nuclear power plants as well as radioactive waste repository in order to nominate them for the Regional Plan of Croatia. Until July 1989 the set of exclusionary criteria was defined. Validation of criteria was carried out by the Croatian Government. Using the method of exclusionary screening of the

whole territory of Croatia /Figure 2/, eight potential areas were identified in autumn 1990 /Figure 3/. Collecting of additional data on potential areas and defining comparative criteria were main project activities being worked out during the rest of 1990 and terminated in August 1991. Methodology and criteria were assessed by the IAEA Radioactive Waste Management Advisory Programme (WAMAP) as high graded /1/. Due to war operations in our country, the validation of these criteria, being commited to the Government is still under way.

4. Site Acceptable Assessment

In the site slection process it would be insufficent to find out only the host-rock able to provide waste containment i.e. to keep water away from the waste. According to accepted approach it is recognized that it is the entire system - waste form and package, host-rock units, surrounding host-rock units, and environment in the region - that provides waste containment and isolation. In keeping with this philosophy the applied criteria try to address all site characteristics which contribute to waste containment and isolation. These charasteristics include geo-technical and socio-economic concerns. In applying these criteria, greater consideration is given to those criteria that directly influence the safety of the repository than to criteria which affect only repository cost and timeliness.

In the final analysis, repository licencing and operation can only proceed when it can be demonstrated that the total repository system, including the waste form and its packaging, the design of the engineered facilities and barriers, and the multiple natural barriers, performs adequately to protect public-health and safety and to preserve the quality of the environment /4/.

In the performed stage of site selection and characterization, the following exclusionary criteria have been applied:(1)Lithology & geomorphology; (2) Hydrogeology - acquifer

protection: (Neotectronics- fault activity: (4) Seismicity- maximum acceptable earthquakes; (5) Hidrology - flooding protection; (6) Demography-population density; (7) Mineral and ore exploitation: (8) Nature preservation; (9) Culture heritage protection; and (10) National defense /5/.

For the further site selection i.e. identification of potential sites, series of comparative site-acceptance criteria considering all necessary geotechnical and regional-planning requirements will be applied to /Figure 4/. According to their individual site-acceptance roles, the specific weighting factors will be given to each criterion. Weighting factors will be defined by the expert team.

5. Conclusion

The construction of radioactive waste repository in Croatia is going to be "condition sine qua non" in near future. Due to existing and foreseen radwaste quantities - generated at various sources - that Croatia is obliged to repose, there is no dolemma "whether to construct the radioactive waste repository or not", but "where and how to construct it in order to preserve the envioronment and human health". Hence, the cooperation of experts and the public in the affairs related to radioactive waste management in general, is a real assumption leading to the satisfying solution of the problem i.e. to attain an efficacious isolation system for radionuclides contained in disposed waste. In order to achieve this goal, the world practice related to site-selection, repository design options, licencing and economic evaluation of radioactive waste disposal, will offer a valuable support.

References

/1/ ." The Mission Report", Radioactive Waste Management Advisory Programme (WAMAP), IAEA, Vienna, 1991

/2/ Saler A., General Approach and Site Selection Criteria for Low- and Intermediate Level Radioactive Waste Repository in Yugoslavia", Proceedings of 28th International Geologic Congress, Washington, D.C. 1991.

/3/ "Site Survey Stage of the Siting Process for Low - and Intermediate-Level Radioactive Waste Disposal Facilities",The Institute for Urban Planning of Croatia, Zagreb. 1991.

/4/ "NWTS Criteria for the Geologic Disposal of Nuclear Wastes: Site-Qualification Criteria", ONWI Staff, US Department of Energy, 1980.

/5/ "Kriteriji za izbor lokacija za termoelektrane i nuklearne objekte", Vlada RH, Zagreb, 1991.

RADIOACTIVE WASTE REPOSITORY SITE-ACCEPTANCE CRITERIA APPLIED IN CROATIA

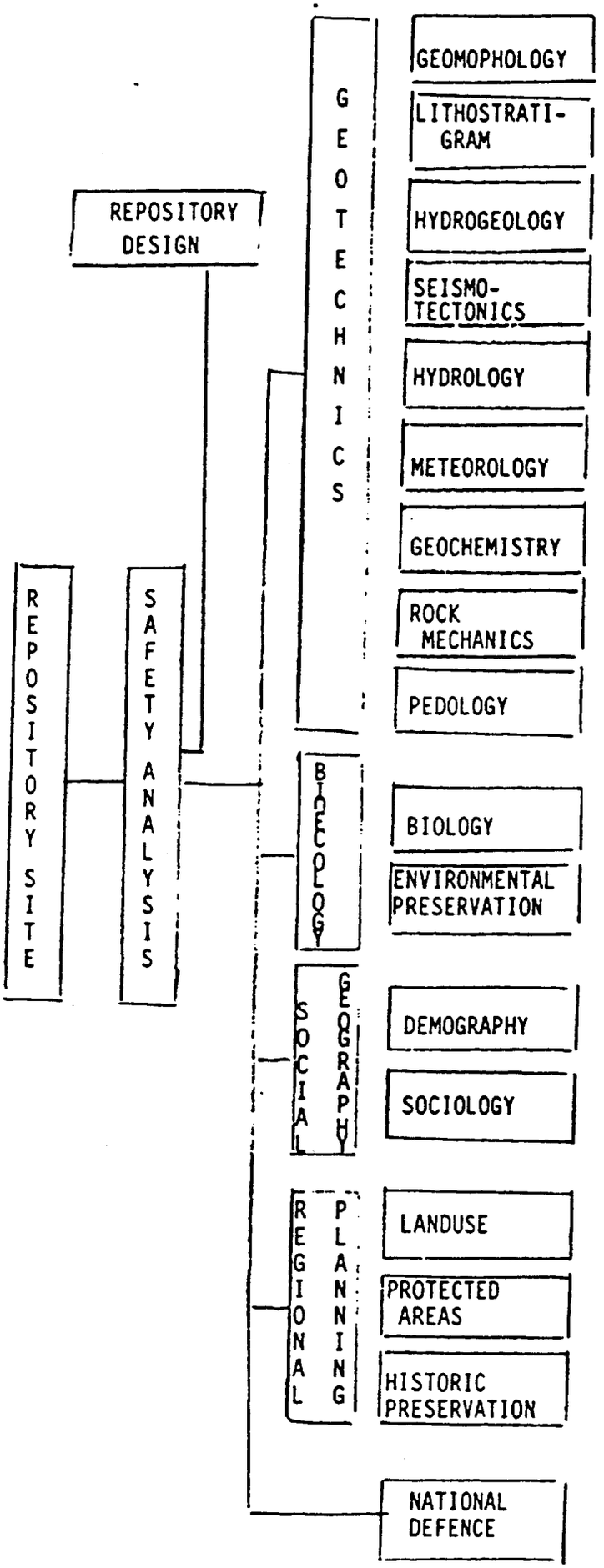
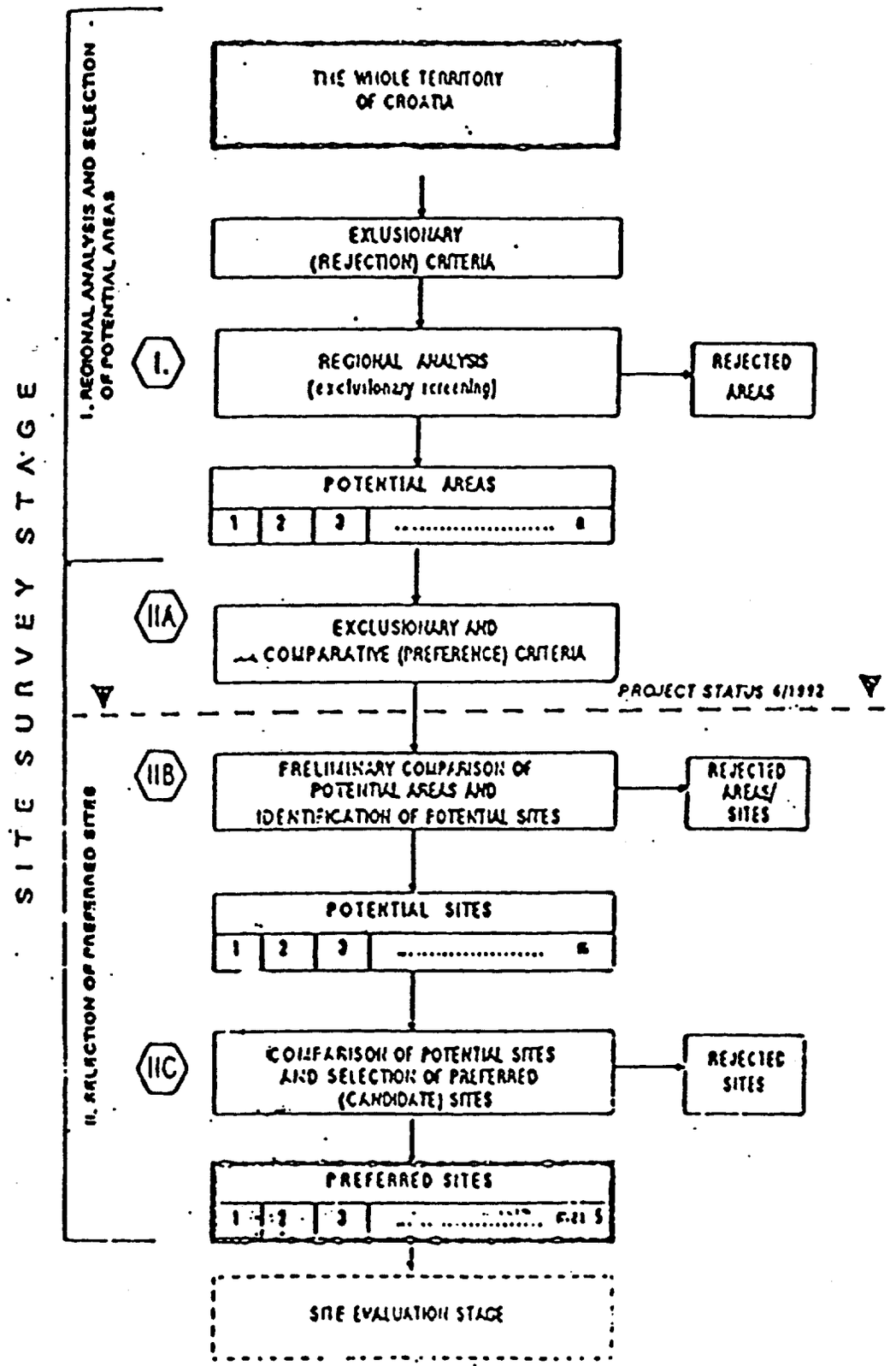
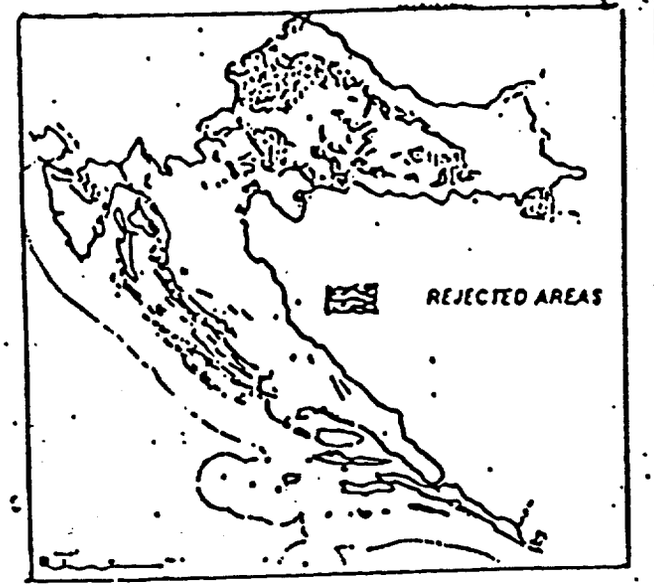


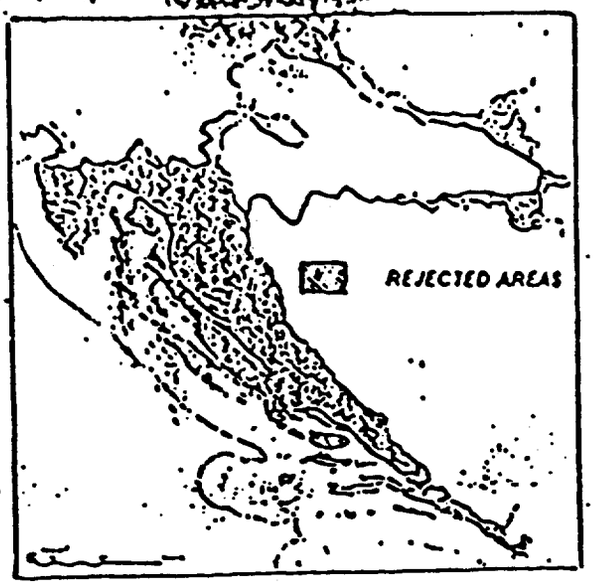
FIG. 1. SCHEME OF THE RADIOACTIVE WASTE REPOSITORY SITE SELECTION IN CROATIA



GEOMORPHOLOGY: Slope dynamics

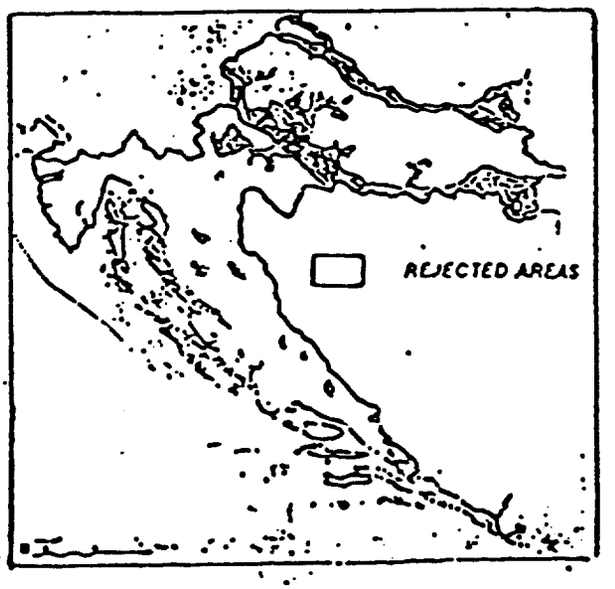


HYDROGEOLOGY: Isolation to groundwater

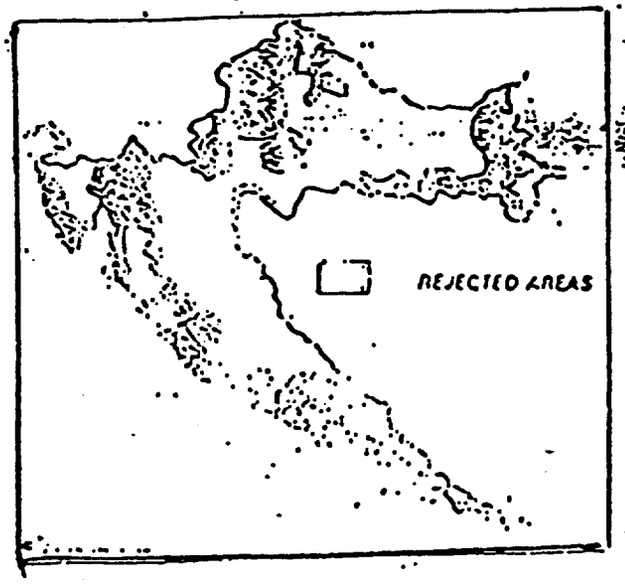


SEISMICS & TECTONICS: Earthquake intensity and faulting

HYDROLOGY: Risk of flooding



DEMOGRAPHY: Population density



RESULTS OF EXCLUSIONARY SCREENING

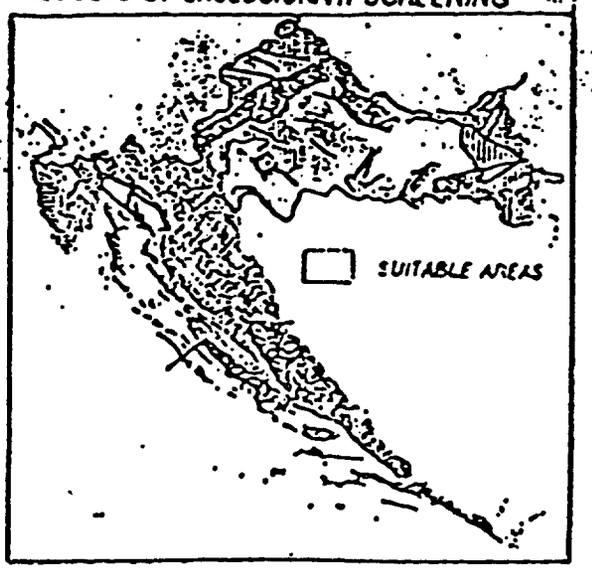
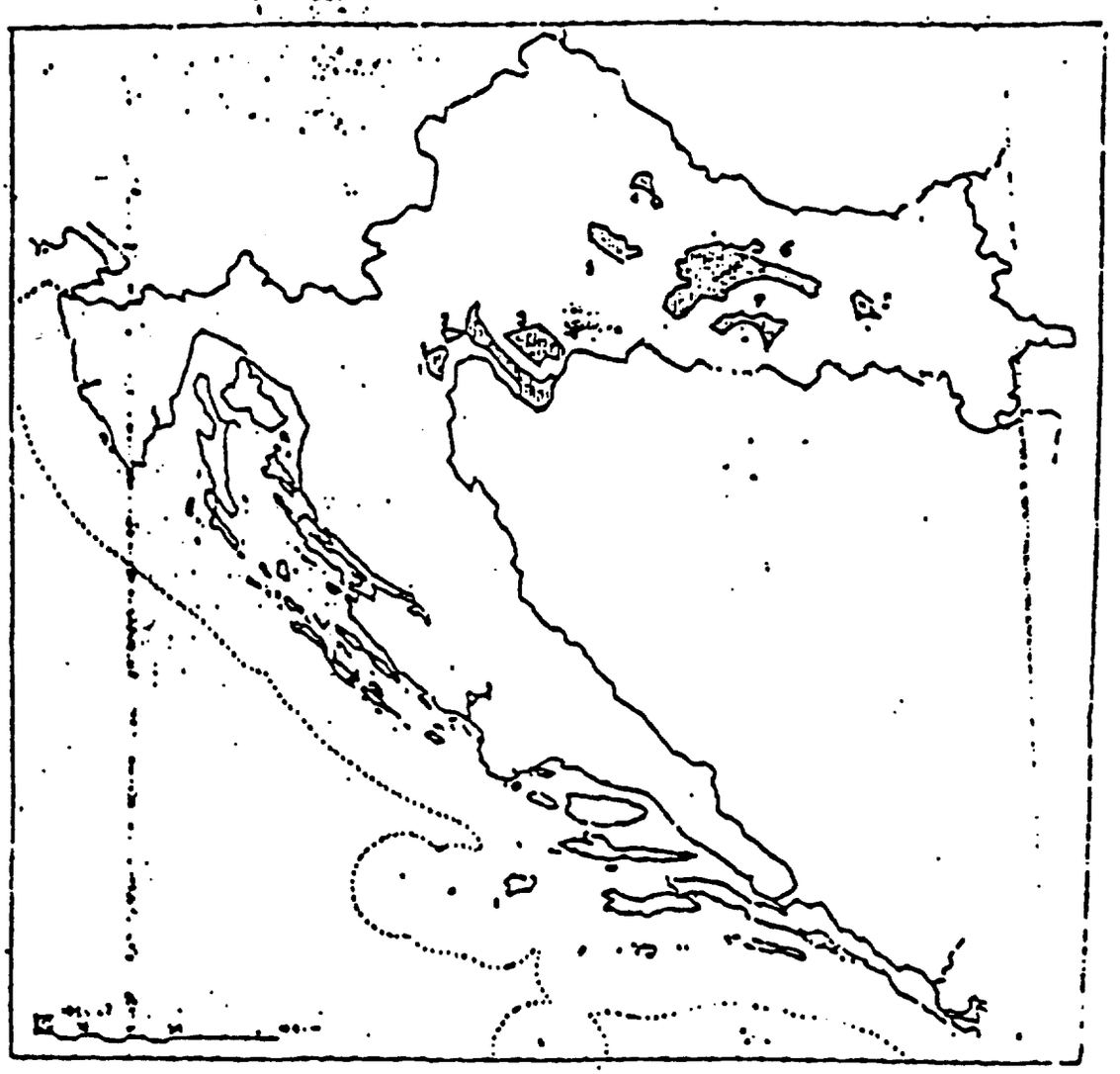


FIG. 3 RADIOACTIVE WASTE REPOSITORY SITE SELECTION STAGE I : IDENTIFICATION OF POTENTIAL AREAS



1 • Petrova gora mountain

2 • Trgovska gora mountain

3 • Zrinska gora mountain

4 • Bilogora hills (NE slopes)

5 • Moslavačka gora mountain

6 • Psunj, Papuk and Krndija mountains (major parts)

7 • Požeška gora mountain

8 • Eastern foothills of Ural and Krndija

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