

Environmental Impact Assessment Report for the Facility for Treatment and Conditioning of Radioactive Waste with a High Volume Reduction Factor at Kozloduy Nuclear Power Plant

CHAPTER 5

INFORMATION ON THE METHODS USED FOR FORECASTING AND ASSESSING THE IMPACTS ON THE ENVIRONMENT AND THE PEOPLE

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5. INFORMATION ON THE METHODS USED FOR FORECASTING AND ASSESSING THE IMPACTS ON THE ENVIRONMENT AND PEOPLE

5.1 Laws, regulations, methodologies, methodology guidance, instructions, orders, decrees, rules, strategies and plan programs used in EIAR preparation

5.1.1 General

- Environmental Protection Act, promulgated in State Gazette No 91 of September 25, 2002, last amended State Gazette No 27 from 15. 03.2013.
- Regulation on the Terms and Procedure for Implementing Environmental Impact Assessment (Title amended – SG 3/2006), adopted with CMD 59/7.03.2003, prom. SG 25/18.03.2003, amended SG 3/10.01.2006, SG 80/9.10.2009, SG 29/16.04.2010, SG 3/11.01.2011, SG 94/30.11.2012, in effect since 30.11.2012.
- Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, 25 June 1998.
- Espoo Convention (Convention on Environmental Impact Assessment in a trans-boundary context), 1991, ratified and effective 10.09.1997.
- Rules of Organization and Operation of the Interdepartmental Commission for Reconstruction and Assistance at the Council of Ministers (adopted with CMD from 6.04.2010, prom. SG 28/13.04.2010, in force since 13.04.2010, last amended SG 75/2.10.2012.
- Law on ratification of the Agreement between the European Community and the Republic of Bulgaria concerning the participation of the Republic of Bulgaria in the European Environment Agency and the European Information and Observation network, promulgated in State Gazette No 105/19.12.2000.

5.1.2 Atmosphere and air

- Clean Ambient Air Act, promulgated in State Gazette No 45 from 28.05.1996, last amended State Gazette No 102/21.12.2012.
- Directive 2010/75/EC from 24/11/2010 regarding the industrial emissions (integrated pollution prevention and control).
- Regulation № 1 from 27.06.2005 on the emission limit values for harmful substances, discharged to the atmosphere from point-source emissions, and promulgated in State Gazette 64 from 5.08.2005, effective 6.08.2006.
- Regulation No 6 from 26.03.1999 on the terms and procedure for measurement of harmful substances point-source emissions discharged to the atmosphere, promulgated in State Gazette No 31 from 6.04.1999, last amended State Gazette No 34/29.04.2011.

- Regulation No 7 from 3.05.1999 on ambient air quality assessment and management, promulgated in State Gazette No 45 from 14.05.1999, effective 1.01.2000.
- Regulation No 7 from 21.10.2003 for emission limit values of VOC emitted into the air due to the use of solvents in certain installations, promulgated in State Gazette 96 from 31.10.2003 , last amended State Gazette 40/28.05. 2010.
- Regulation No 11 on limit values for arsenic, cadmium, nickel and polycyclic aromatic hydrocarbons in ambient air, promulgated in State Gazette No 42/2007.
- Regulation No 12/15.07.2010 on limit values for sulfur dioxide, nitrogen dioxide, particulate matter, lead, benzene, carbon monoxide and ozone in ambient air, promulgated in State Gazette No 58/30.07.2010.
- Regulation № 14 from 23.09.1997 on maximum allowable limit value for airborne contaminants in settlements ambient air, promulgated in State Gazette 88 from 3.10.1997 , last amended State Gazette 42 from 29.05.2007, effective 1.01.2008.
- Regulation № 16 from 12.08.1999 on the control of volatile organic compound (VOC) emissions resulting from the storage, loading or unloading and transportation of petrol, promulgated in State Gazette 75 from 24.08.1999, last amended State Gazette 33/27.04.2012, effective 27.04.2012.
- Regulation on the requirements to liquid fuels, terms, procedure and method of control, adopted with Council of Ministers Decree № 156 from 15.07.2003, promulgated in State Gazette 66 from 25.07.2003 , last amended State Gazette 36/10.05.2011, effective 10.05.2011.
- Convention on long-range trans-boundary air pollution, (Geneva 1979), Law on ratification - 1981, entering into force 1983, The protocols attached to the convention are ratified and effective;
- Council of Ministers Decree № 254 from 30.12.1999 on the control and management of ozone depleting substances, promulgated in State Gazette 3 from 11.01.2000 , last amended State Gazette 15/16.02.2007.
- Regulation on the control and management of ozone depleting substances, promulgated in State Gazette 3 from 11.01.2000 , last amended State Gazette 3 from 13.01.2009.
- Uniform methodology for inventory of the emissions of harmful substances in the air. MEW, EEA, 2007. http://eea.government.bg/bg/legislation/air/mpg-07/Metodika_2007.html.
- Calculation Methodology for the estimated height of discharge units, the distribution and the estimated ground level pollutant concentrations from 25 February 1998, adopted by MEW, promulgated BSA 7/8 from 1998.
- Instruction on preliminary air quality assessment, approved by MEW.
- Instruction on manual validation of data obtained from air quality monitoring points, approved by EEA Executive director.
- Instruction on the procedure of preparing statements of finding and measuring records of the harmful substances emissions discharged in the ambient air, adopted by MEW on 10.08.2001.

- Methodology on the assessment of volatile organic compound (VOC) emissions resulting from the storage, loading or unloading and transportation of petrol (approved with Ordinance No RD-1238/01.10.2003 - MEW).
- Methodology for the definition of the distribution of emissions from motor vehicles and their ground level concentration (approved with Ordinance No ПД-994/04.08.2003 of MEW).
- Methodology on forecasting of SO₂ content in flue gases from petrol products, maximum allowable pollutant emissions levels in the ambient air, MEW, SG 81/1991.
- Analysis of the dose burden for the population in the KNPP 30 km monitored area from the gas aerosol and liquid radioactive releases in the environment from the decommissioning of Units 1-4 and the emissions from the Plasma melting facility (PMF, Project 5c) operation, including modeling, pursuant to the MEW recommendations (Letter Ref. OVOS-277/2012).

5.1.3 Surface and grounds waters

- Water Act, promulgated in State Gazette 67 from 27.07.1999, last amended State Gazette 82 from 26.10.2012.
- Regulation No 1/10.10.2007 on the study, use and protection of groundwater prom. SG 87/30.10.2007, effective 30.10.2007, last amended SG 15/21.02.2012, effective 21.02.2012.
- Regulation No 1/11.04.2011 on water monitoring, promulgated in State Gazette 34/29.04.2011, effective 29.04.2011, last amended SG 22/5.03.2013, effective 5.03.2013.
- Regulation No 2/8.06.2011 on issuing of permits for discharge of waste water in water bodies and setting individual emission limits for point sources of pollution, prom. SG 47/21.06.2011, effective 21.06.2011, last amended SG 14/17.02.2012, effective 17.02.2012.
- Regulation No 3 from 16.10.2000 on the Terms and Procedures for the Exploration, Design, Approval and Operation of Sanitary Protection Areas Around Water Sources and Facilities for Drinking and Domestic Water Supply and Around Water Sources of Mineral Waters Used for Therapeutic, Preventive, Drinking and Hygienic Purposes, promulgated in State Gazette 88 from 27.10.2000.
- Regulation No 4 from 20.10.2000 on the quality of waters supporting fish and shellfish organisms, promulgated in State Gazette 88 from 27.10.2000.
- Regulation No 6 from 9.11.2000 on the Limit Values for Admissible Contents of Dangerous and Harmful Substances in the Waste Water Discharged in the Water Bodies, promulgated in State Gazette 97 from 28.11.2000, last amended State Gazette 24 from 23.03.2004.
- Regulation No 7 from 14.11.2000 on the Terms and Procedure for Discharge of Industrial Waste Waters into Settlement Sewer Systems, promulgated in State Gazette 98 from 1.12.2000.
- Regulation No 7/08.08.1986 on the indicators and standards for determining the quality of surface waters, SG 96/1986.

- Regulation on repealing Regulation No 7/1986 on the indicators and standards for determining the quality of surface waters (SG 96/1986), effective 05.03.2013, prom. SG 22/5.03.2013.
- Amendments to Articles 25 and 26 from the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Ratified by law on 12.09.2012 – SG 73/2012, effective 6.02.2013). Issued by MEW, prom. SG 22/5.03.2013.
- Regulation No 4/14.09.2012 on the characterization of surface waters, effective 05.03.2013, prom. SG 22/5.03.2013.
- Regulation No 9 from 16.03.2001 on the Quality of Water Intended for Human Consumption, promulgated in State Gazette 30 from 28.03.2001, last amended State Gazette 15/21.02.2012, effective 21.02.2012.
- Regulation on standards for environmental quality for priority substances and certain other pollutants, prom. SG 88/9.11.2010.
- Regulation on the use of surface waters, prom. SG 56/22.07.2011.
- Ordinance No RD-272/2001 on the categorization of the surface waters in water bodies and in parts of them;
- Ordinance No RD-970/2003 for determining the sensitive areas in water bodies.
- Danube Region Basin Directorate Management plan of River region (DRBD).

5.1.4 Soils

- Soil contamination Act, promulgated in State Gazette 89 from 6.11.2007, last amended State Gazette 38/18.05.2012.
- Law on protection of the agricultural land, prom. SG 35/24.04.1996 last amended SG 91/20.11.2012.
- Law on Ownership and Use of Agricultural Land, prom. SG 17/1.03.1991, last amended SG 44/12.06.2012.
- Regulations for Implementation of the Law on Protection of Agricultural Land, prom. SG 84/1996, last amended 20.05.2011.
- Regulation № 26 from 2.10.1996 for Land Reclamation, Improvement of Infertile Land, Humus Layer Removal and Utilization, promulgated in State Gazette 89 from 22.10.1996, last amended State Gazette 30 from 22.03.2002.
- Regulation 4/12.01.2009 for soil monitoring, SG 20/17.03.2009.
- BDS 17.4.1.04-88 – General requirements to soil classification in reference to chemical contaminant's impact on soils;
- BDS 17.4.3.01-86 – General requirements to the methods for contaminants definition;
- Documents presented by the Investor.

5.1.5 Earth bowels

- Ores and mineral resources act, promulgated in State Gazette No 23 of March 12, 1999, last amended State Gazette No 45 of June 15, 2012;

- Regulation on the National Geo-fund, adopted with Council of Ministers Decree No 264 of December 30, 1999, promulgated in State Gazette No 6 of January 21, 2000, last amended State Gazette No 54 of July 4, 2006.
- Regulation on geological and technical documentation of prospecting and mining sites (prom. SG 108/10.12.1999);
- Explanatory note to the geological map of Bulgaria in scale 1:100 000.

5.1.6 Landscape

- Country Regional landscape zonation. Geography of Bulgaria, Monograph BAS, Sofia, 1996.
- Country landscape zonation by types Geography of Bulgaria, Monograph BAS, Sofia 1996.
- Basic geo ecological landscapes classification in Bulgaria. Sofia. 1989.

5.1.7 Biological Diversity

5.1.7.1 Flora and Fauna

- Biological Diversity Act, prom. SG 77/09.08.2002, last amended SG 27/15.03.2013.
- National Action Plan for Biodiversity Conservation. 2000. MEW.
- Red Book of Bulgaria, V I, 1984. BAS;
- Red Book of Bulgaria. Volume I Plants and mushrooms. 2011. BAS and MEW;
- Red Book of Bulgaria. Volume III Natural habitats. 2011. BAS and MEW;
- Directory of existing methodologies to assess and predict the impact on the environment. 1997. MEW;
- Flora of Bulgaria, 1963 –1995. V. I – X, BAS;
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.
- Council Directive 2009/147/EO/30.11.2009 on the wild birds' preservation.
- Medicinal Plants Act, promulgated in State Gazette No 29/7.04.2000, last amended State Gazette No 82/26.10.2012;
- Apostolova, I., L. Slavova. 1997. Synopsis of plant communities in Bulgaria;
- Assiov, B. I all. 2002. Synopsis of the higher flora of Bulgaria. Horology and flora elements. C. Bulgarian-Switzerland program for biological diversity protection;
- Bondev, I. 1991. The vegetation in Bulgaria. St.Kliment Ohridski University edition;
- Bondev, I, 1997. Geo botanical zonation. B: Geography of Bulgaria, 1997, Acad. Edition “prof. M. Drinov”);
- Delipavlov, D. and others 2003. Determinant of the plants in Bulgaria;
- Kojuharov, St. and others 1992. Determinant of vascular plants in Bulgaria;
- Handbook for Natura 2000 in Bulgaria. 2002. Environment preservation series - book 5. BSPB;
- Pavlov, D. 2006. Phytocoenology;
- Pavlov, D., M. Dimitrov. 2010. Botany;

- Pavlov, D., M. Dimitrov. 2011. Phytocoenology.
- Bern convention. Council of Europe. 1979 (2000) STE;
- Walter, K.S. and Gillett, H.J/ (eds) (1998) 1997. IUCN Red List of Threatened Plants. IUCN – The World Conservation Union, Gland;
- Simeonov, S., T. Michev, D. Nankinov 1999. Fauna of Bulgaria, v. 20 Aves Part I, BAS publishing, Sofia, 350 p;
- Nankinov, D, S. Simeonov, T. Michev, B. Ivanov, 1997. Fauna of Bulgaria, V. 26. Aves. Part II., Sofia;
- Jankov, P. (eds.). 2007. Atlas of Breeding Birds in Bulgaria. Environment preservation series, Book 10. Sofia, BSPB;
- Michev, T., L. Profirov. 2003. Midwinter Numbers of Waterbirds in Bulgaria (1977-2001). Results from 25 years of mid-winter count carried out at the most important Bulgarian Wetlands. Publ. House Pensoft
- Michev, T., M. Stoyneva (eds). 2007. Inventory of Bulgarian Wetlands and their Biodiversity. Publ. House Elsi-M, Sofia, 364 pp. + CD supplement.
- Golemanski and others (eds.). 2011. Red book of Bulgaria. Volume 2. Animals. BAS & MoEW, Sofia, 383 p.

5.1.7.2 Protected Areas and Protected Territories

- Protected territories Act, prom. SG 133/11.11.1998, amended SG 19/08.03.2011, last amended SG 27/15.03.2013.
- Biological Diversity Act, prom. SG 77/09.08.2002, last amended SG 27/15.03.2013.
- Regulation on the terms and procedure for the assessment of conformity with the subject and purposes of protected areas preservation of certain plans, programs, projects and investment projects, adopted with Council of Ministers Decree No 201 from 31.08.2007, promulgated in State Gazette 73 from 11.09.2007, in force since 11.09.2007, last amended SG 94/30.11.2012.
- Protected areas register, Executive Environmental Agency, eea.government.bg/zpo/index.jsp.
- Convention on Wetlands of International Importance Especially as Waterfowl Habitat (The Ramsar Convention) - ratified, in force for the Republic of Bulgaria since 24.01.1976, last amended State Gazette 56 from 10.07.1992.
- Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) - ratified on 25.01.1999, last amended State Gazette 13 from 1991, in force for Bulgaria since 01.05.1991.
- Convention for the Protection of the World Cultural and Natural Heritage ratified and entered into force for Bulgaria in 1976.
- Convention on the Conservation of Migratory Species of Wild Animals (The Bonn Convention) - ratified on 03.08.1999, in force for the Republic of Bulgaria since 01.11.1999 – last amended State Gazette 69 from 3.08.1999;
- National Action Plan for the conservation of the most important wetlands in Bulgaria, 1995.
- National strategy on the protection of the biological diversity, 1993;
- National plan on the protection of the biological diversity 2005-2010;

- Sites in Bulgaria, important from ornithological point of view. Bulgarian Society for the Protection of Birds (BSPB), 1999;
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.
- Council Directive 2009/147/EO/30.11.2009 on the wild birds' preservation.
- Register of protected areas, EEA, eea.government.bg/zpo/index.jsp.

5.1.8 Material assets and cultural heritage

- Cultural Heritage Act, promulgated in State Gazette 19 from 13.03.2009 , in force from 10.04.2009; amended with Decision № 7 from 29.09.2009 - SG 80 from 9.10.2009; last amended State Gazette 15 from 15.02.2013;
- Regulation no 5/1979 on the exploration, study and documentation of immovable cultural monuments, promulgated in State Gazette 6/1979;
- Regulation № 11 on the procedure for the acceptance of conservation and restoration works performed on immovable cultural monuments, promulgated in State Gazette 25 from 29.03.1983;
- Regulation № 17 on fixing the limits of the regime for use and protection of immovable cultural monuments outside towns and villages, promulgated in State Gazette 35 from 4.05.1979;
- Regulation № 26 from 10.04.1996 on the development, use and management of the Automatic information system “Archaeological Map of Bulgaria”, promulgated in State Gazette 34 from 23.04.1996;
- Penal code, promulgated in State Gazette 26/1968, last amended State Gazette 17/21.02.2013;
- European Convention for the Protection of the Archaeological Heritage, ratified by law on 01.04.1993, promulgated in State Gazette 30/1993, effective 25.05.1995;
- Convention for the Protection of the Architectural Heritage of Europe, ratified on 25.01.1991, promulgated in State Gazette 13/1991, effective 01.05.1991;
- European Landscape Convention, ratified by law on 13.10.2004, promulgated in State Gazette 94/2004, effective 01.03.2005

5.1.9 Health status

- Health act, promulgated in State Gazette 70 from 10.08.2004, last amended State Gazette 15/15.02.2013;
- Law on health and safe work conditions, promulgated in State Gazette 124 from 23.12.1997, last amended State Gazette 15/15.02.2013;
- Disaster Protection Law, promulgated in State Gazette 102/19.12.2006, last amended State Gazette 80/14.10.2011;
- Protection Against Environmental Noise Act, promulgated in State Gazette 74/13.09.2005;
- Regulation 6/26.06.2006 for environmental noise indicators, giving account of the level of discomfort during different parts of the day and night, limits of environmental noise indicators, methods to determine the value of noise indicators and the harmful effects of noise on the population's health, promulgated in State Gazette 58/18.07.2006;

- Regulation No 3/1987 for the compulsory preliminary and periodic medical examinations of workers, promulgated in State Gazette 16/27.02.1987, last amended State Gazette 78/30.09.2005;
- Regulation № 3 from 19.04.2001 on minimum requirements for safety and occupational health protection in use of personal protective equipment, promulgated in State Gazette 46 from 15.05.2001, effective 16.08.2001, last amended State Gazette 40 from 18.04.2008;
- Regulation № 5 from 11.05.1999 on the terms, procedure and frequency of risk assessment performance, promulgated in State Gazette 47 from 21.05.1999;
- Regulation No 6/15.08.05 on the minimum requirements for ensuring the protection of workers from the risks related to exposure to noise at work, promulgated in State Gazette 70/26.08.2005, effective 15.02.2006;
- Regulation No 7 from 23.09.1999 on minimum requirements for healthy and safe occupational work and equipment use conditions, promulgated in State Gazette 88 from 8.10.1999, last amended State Gazette 40 from 18.04.2008;
- Regulation No 13/2003 on protecting workers from risks related to exposure to chemical agents at work, effective 31.01.2005, last amended SG 67/17.08.2007;
- Regulations on labor safety in loading and unloading;
- Regulation No 15/1999 on the terms, procedure and requirements on the development and implementation of physiological work/respite mode at work, promulgated in State Gazette 54 from 15.06.1999;
- Regulation RD-07-2 on the terms and procedure for conducting periodic training and instruction of employees on the rules to ensure safety at work, last amended SG 25/30.03.2010;
- Regulation No 54/13.12.2010 on the activities of the national monitoring system for environmental noise and on the requirements for internal monitoring and the provision of information from industrial sources of environmental noise, promulgated in State Gazette 3/11.01.2011.
- Regulation No RD-07/8/20.12.2008 for the minimum requirements for signs and signals of safety and/or health at work, prom. SG 3/13.01.2009;
- Instruction for informing the population in case of exceeding the established alarm thresholds, approved by MEW in 2003.
- Analysis of the dose burden for the population in the KNPP 30 km monitored area from the gas aerosol and liquid radioactive releases in the environment from the decommissioning of Units 1-4 and the emissions from the Plasma melting facility (PMF, Project 5c) operation, including modeling, fulfilling the recommendations of MEW (letter No OVOS-277/ 2012).

5.1.10 Demographic, social and socioeconomic environment

- Geography of Bulgaria, Physical Geography, published by BAS, Sofia, 1966.
- Geography of Bulgaria, Physical and Socio-Economical Geography, published by BAS, Sofia, 1997.
- Geography of Bulgaria, Physical and Socio-Economical Geography, ForKom, Sofia, 2002.

- Map of Bulgaria of the Scale 1:400 000, Global, MSAAR, Sofia, 2008.
- Law on the Administrative and Territorial Development of Republic of Bulgaria, (prom. SG 63/14 July 1995, last amended SG 95/2.12.2011).
- Spatial Development Act (SPA), (prom. SG 1/2001, last amended SG 28/19.03.2013).
- Census of Population, Housing and Agricultural Holdings in 2001, Volume 1, POPULATION, book 3, Population by Districts, Municipalities and Settlements, NSI, Sofia, 2002.
- National Strategy for Demographic Development 2006-2020 of the Ministry of the Labor and Social Policy (MLSP).
- Report from 2010, on the progress of implementation of the National Strategy for Demographic Development 2006-2020 of the MLSP.
- Population 2007, NSI, C, 2008.
- Population 2010, NSI – on-going statistics
- Census of the Population and Housing in Republic of Bulgaria in 2011, www.nsi.bg
- Regions, Districts and Municipalities in Republic of Bulgaria, NSI, Sofia, 2004.

5.1.11 Waste and hazardous substances

- Waste Management Act, promulgated in State Gazette 53/13.07.2012, in force since 13.07.2012;
- Regulation on the treatment and transportation of waste from titanium dioxide production (adopted with CMD 87/30.04.2004, prom. SG 39/12.05.2004);
- Regulation No 3 from 1.04.2004 on Waste Classification, promulgated in State Gazette 44 from 25.05.2004, last amended SG 23/20.03.2012;
- Regulation on Packaging and Packaging Waste, Adopted with Council of Ministers Decree No 271/30.10.2012, prom. SG 85/6.11.2012, in effect since 6.11.2012;
- Regulation 6 on the requirements for the construction and operation of facilities for incineration and co-incineration of waste (prom. SG 78/2004);
- Regulation No 7 from 24.08.2004 on the Requirements for Sites Determined for Placing of Waste Treatment Facilities, promulgated in State Gazette 81 from 17.09.2004;
- Regulation No 8 from 24.08.2004 on the Conditions and Requirements for Construction and Operation of Landfills and Other Facilities and Installations for Waste Disposal and Recovery, promulgated in State Gazette 83 from 24.09.2004, amended State Gazette 87 from 30.10.2007, last amended SG 27/01.04.2011;
- Regulation No 2/22.01.2013 on the Procedure and Formats, used to Submit Information on Waste Activities, as well as the Procedure for Keeping a Public Register, promulgated in State Gazette 10/05.02.2013.
- Regulation on the terms and procedure for utilization of sludge from wastewater treatment through its use in agriculture, adopted with CMD 339/14.12.2004, promulgated in State Gazette 112/23.12.2004.

- Regulation on the Requirements for Treatment and Transportation of Industrial and Hazardous Waste, adopted with Council of Ministers Decree No 53 from 19.03.1999 , promulgated in State Gazette 29 from 30.03.1999;
- Regulation on the Requirements for Treatment and Transportation of Waste Oils and Waste Oil Products, adopted with Council of Ministers Decree No 352/27.12.2012, prom. SG 2/08.01.2013;
- Regulation on the Requirements for Marketing of Batteries and Accumulators and for Treatment and Transportation of Spent Batteries and Accumulators, adopted with Council of Ministers Decree No 351/27.12.2012, prom. SG 2/08.01.2012, in effect since 08.01.2013, amended SG 6/22.01.2013;
- Regulation on the procedure and method of inventory of equipment containing polychlorinated biphenyls, its marking and cleaning, as well as on treatment and transportation of waste containing polychlorinated biphenyls (adopted with CMD 50/9.03.2006, prom. SG 24/21.03.2006);
- Regulation on the Requirements for Marketing of Electrical and Electronic Equipment and Treatment and Transportation of Waste Electrical and Electronic Equipment, adopted with Council of Ministers Decree No 355/28.12.2012, prom. SG 2/08.01.2013, in effect since 08.01.2013, amended SG 5/18.01.2013;
- Regulation on the Requirements for Treatment of Waste from Motor Vehicles, adopted with Council of Ministers Decree No 1/15.01.2013, prom. SG 7/25.01.2013;
- Regulation on the treatment of spent tires (adopted with CMD 221/14.09.2012, prom. SG 73/25.09.2012);
- Regulation 14/15.11.2010 on the procedure and manner of calculating the amount of the deductions and their spending on activities of closure and after care of sites of landfills (prom. SG 93/26.11.2010);
- Regulation on the procedure and manner of calculating the amount of the financial guarantee or equivalent insurance and to provide annual returns on transboundary shipments of waste (adopted with CMD 76/31.03.2011, prom. SG 29/08.04.2011);
- Regulation on management of construction waste and use of recycled building materials, adopted with CMD 277/5.11.2012, prom. SG 89/13.11.2012, in effect since 13.11.2012;
- Guidance on pre-treatment of waste prior to disposal, (approved by order RD– 664/23.08.2007 by the Minister of environment and water);
- Guidance on basic characterization of waste and applying the criteria for acceptance of waste at different classes of landfills, (approved by order ПД – 824/11.11.2011 by the Minister of environment and water);
- Law of Protection from the Harmful Impact of the Chemical Substances and Preparations (title amended SG 114/2003, SG 63/2010, in effect since 13.08.2010), Promulgated in State Gazette 10 from 4.02.2000 , last amended State Gazette 84/2.11.2012, in effect since 2.01.2013;
- Regulation on the procedure and manner of classification, packaging and labeling of chemical substances and mixtures, prom. SG 68/31.08.2010, in effect since 31.08.2010, to be applied until 31.05.2015;

- Regulation on the procedure and manner of classification, packaging and labeling of new and existing chemical substances and products with 16 applications (adopted with CMD 316/20.12.2002, prom. SG 5/17.01.2003, effective 1.01.2004, last amended SG 51/3.06.2008);
- Regulation on prevention of major accidents involving dangerous chemical substances and limiting their consequences, in effect since 01.01.2013, adopted with CMD 238/28.09.2012, prom. SG 76/05.10.2012;
- Guidelines for conducting and documenting the safety assessment of storage of dangerous chemical substances and mixtures, issued by the Minister of Environment and Water, 2013;
- Corrigendum to Directive 2006/121/EC of the European Parliament and of the Council of 18 December 2006 amending Council Directive 67/548/EEC on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances in order to adapt it to Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) and establishing a European Chemicals Agency (OJ L 396, 30.12.2006).

5.1.12 Regulation of the use of nuclear energy

- EC Nuclear safety and environment, Environmental Impact Assessment for the Decommissioning Nuclear Installation, EUR 20051, June 2001.
- Act on Safe Use of Nuclear Energy, promulgated in State Gazette No 63 of June 28, 2002, last amended State Gazette 15/15/02/2013.
- Regulation on the Procedure of Granting Licenses and Permissions for Safe Use of Nuclear Energy, adopted with CMD 93/04.05.2004, promulgated in State Gazette No 41 of May 18, 2004, last amended State Gazette No 76/05.10.2012;
- Regulation on Safety of Nuclear Power Plants, adopted with Council of Ministers Decree No 172 of July 19, 2004, promulgated in State Gazette No 66 of July 30, 2004, last amended State Gazette 5/19/01/2010;
- Regulation on Safety during Decommissioning of Nuclear Facilities (art. 26, par. 2 from ASUNE), adopted with Council of Ministers Decree No 204 of August 5, 2004, promulgated in State Gazette No 73 of August 20, 2004;
- Regulation on Safe Management of Spent Nuclear Fuel, adopted with Council of Ministers Decree No 196 of August 2, 2004, promulgated in State Gazette No 71 of August 13, 2004;
- Regulation on Safety of Radioactive Waste Management, adopted with Council of Ministers Decree No 198 of August 3, 2004, promulgated in State Gazette No 72 of August 17, 2004;
- Regulation on the Terms and Procedure for Delivery of Radioactive Waste to the State Enterprise “Radioactive waste” (SE RAW), adopted with Council of Ministers Decree No 164 of July 14, 2004, promulgated in State Gazette No 64 of July 23, 2004;
- Regulation on the Basic Norms for Radiation Protection (BNRP 2012), adopted with Council of Ministers Decree No 229 of September 25, 2012, promulgated in State Gazette No 76 of October,05 2012;

- Regulation of Radiation Protection during Activity with Sources of Ionizing Radiation, adopted with Council of Ministers Decree No 200 of August 4, 2004, promulgated in State Gazette No 74 of August 24, 2004, last amended State Gazette No 76/05.10.2012.
- Regulation on the terms and procedure for determining the special statute areas around nuclear facilities and facilities with sources of ionizing radiation, promulgated SG 69/2004 of 06.08.2004, last amended SG 53/10.06.2008, in effect since 10.06.2008.
- Regulation on Emergency Planning and Emergency Preparedness in Case of Nuclear and Radiological Emergency (Promulgated SG, 94/29.11.2011).
- Regulation on the Conditions and Procedure for Notification of the BNRA about Events in Nuclear Facilities and Facilities with Sources of Ionizing Radiation (SG 69/06.08.2004, last amended SG 5/19.01.2010).
- Regulation on Emergency Planning and Emergency Preparedness in case of Nuclear or Radiological Emergency, 29.11.2011, prom. SG 94/29.11.2011.
- Regulation 7/24.08.2004 on the requirements to the sites of waste treatment facilities, prom. SG 81/17.09.2004.
- Ordinance on the terms and procedure for transportation of radioactive materials, adopted with CMD 156/13.07.2005, prom. SG 60/22.07.2005.
- Regulation on terms and procedure for notifying the Nuclear Regulatory Agency about events at nuclear facilities and sites with sources of ionizing radiation, prom. SG 71/13.08.2004, last amended SG 7/21.01.2011.
- Regulation on the Provision of Physical Protection of Nuclear Facilities, Nuclear Material and Radioactive Substances (Promulgated SG.77 of September 3, 2004, last amended SG 44/9.05.2008).

5.1.13 Genetically modified organisms – flora, fauna

- Genetically Modified Organisms Act, promulgated in State Gazette 27/29.03.2005, effective 1.06.2005, last amended SG 99/16.12.2011;
- Regulation on work with GMOs in controlled conditions, adopted with CMD 211/04.10.2005; promulgated in State Gazette 81/11.10.2005, last amended SG 33/26.04.2011;
- Regulation on the release of GMOs in the environment and their marketing, adopted with CMD 212/04.10.2005; promulgated in State Gazette 81/11.10.2005, last amended 71/12.08.2008.

5.2 General and specific approach used in EIAR preparation

5.2.0 General principles

The environment impact assessment of the Facility for Treatment and Conditioning of Solid Radioactive Waste with High Volume Reduction Factor at Kozloduy Nuclear Power Plant complies with the requirements of:

- The EIA Bulgarian regulations;
- The EC regulations on the environmental protection;
- The international financial institutions;

- The company standards of the Contracting Authority

The EIA procedure in Bulgaria is regulated by the Environment protection act and the EIA Regulation and regarding this project it includes the following stages:

- Notification of the Competent Authority and the affected population from the respective municipality, in this case the Municipality of Kozloduy, about the IP.
- Assessment of the need for EIA.
- Development of Terms of Reference for determining the scope and content of EIA.
- Assessment of the impacts and preparation of EIA Report
- Public discussion of the EIA Report.
- EIA Decision by a Council of Environmental Experts of the Competent Authority.

Notification of the Competent Authority and the affected population from the respective municipality, in this case the Municipality of Kozloduy, about the IP

Kozloduy municipality has been notified together with the Competent Authority about the KNPP IP. Consultations have been held at the notification stage. These initial consultations have outlined the possible substantial impacts from the project, their spatial distribution (area of impact) and duration, the presence of specific sensitive receptors, etc. Based on the information gathered in the process of these consultations, Terms of Reference for determining the scope and content of EIA Report have been developed.

Assessment of the need for EIA

The present EIA Report, including the CA report, is developed according to the MEW assessment of the need for EIA and CA for the Facility for Treatment and Conditioning of Solid Radioactive Waste with High Volume Reduction Factor at Kozloduy Nuclear Power Plant (Decision 26 – PR/2010).

Determining the scope and content of EIA

The EIA quality depends to a great extent on the successful and timely determination of the scope of the investigation. Regarding the project at this stage consultations have been held with a wide range of stakeholders: the Competent Authority taking the EIA decision, specialized state organizations, departments and agencies, the affected public and NGOs.

The Terms of Reference for determining the scope and content of EIA presents the vision of the Contracting Authority regarding the nature of the IP, as well as the potential impacts on the environment. Thus, the Contracting Authority consults with the Competent Authority, specialized state organizations, departments and agencies, the affected public and NGOs what is planned to be considered in the EIA and how, in terms of factors and components of impact on the environment. The consulting letters to the above mentioned authorities indicate the key factors, which should be reviewed, analyzed and assessed in the EIAR.

The Terms of Reference have been submitted to the Competent Authority for review and comments. Thus, the MEW will also perform intermediate control in the process of EIA.

Assessment of the impacts and preparation of EIA Report

The assessment of the impacts is based on detailed knowledge of the current state of the environment in the project impact area. A detailed study of the existing conditions has been performed, which includes review of the available information and data about the state of the environment and field research for gathering additional project specific data and verification of the existing information.

The project impact on the environment has been assessed based on the gathered information and in compliance with the unified project methodology, described below. The assessment is an iterative process, during which the impacts are initially assessed without the application of mitigation measures, thus identifying the impacts that need mitigation. For these impacts specific measures for avoiding, containment and mitigation of the project impacts are developed and then the impacts are assessed again, this time considering the application of the mitigation measures. Thus, the residual project impacts are also identified and assessed.

Based on the performed impact assessment, the planned mitigation measures and the results of the consultations with the stakeholders, a Plan for management and monitoring of the environment has been developed for the project (see Section 6.2 from the EIAR). The results from the consultations held in the process of impact assessment have been taken into account in the EIAR and are summarized in Chapter 7 of the report.

Public discussion of the EIA Report

The consultations regarding the EIAR Terms of Reference will continue during the EIAR development. The opinions and statements of the above mentioned participants in the EIA procedure will also be accepted in the stage of public access to EIAR, as well as during the public discussion.

If questions arise or new statements regarding the IP are received during the stage of public discussion, in the normatively regulated term, the Contracting Authority will answer these opinions and statements by presenting its answer to the Competent Authority, so that it can be considered during the taking of the EIA decision by the Expert Environmental Council.

EIA Decision

It is taken by the Council of Environmental Experts of the Competent Authority.

EIA methodology

The impacts arise when there is a connection between an IP activity and a Receptor. The impacts assessment is a procedure for which there are still no strict requirements or a well formulated methodology. Generally, it represents determining the source of impact, identification of the route to the receptor, impact assessment and, finally, establishing control over the effect from the impact. This concept is sensible and useful due to the fact that it helps to understand the process and to focus on applying

the control and the mitigation measures at the most effective place. The impact assessment determines the identified impacts in accordance with their “importance”, which is the result of the connection between the “impact degree” and the “receptor sensitivity” for a certain IP activity.

Impact identification

The potential impacts are identified in regard to the IP implementation for all stages of implementation – construction, commissioning, operation and decommissioning, as well as in emergency situations. A certain activity or facility often produces impact/impacts on more than one receptor (component/factor of the natural and/or the social environment). Thus, the availability of a detailed and thorough description of the IP is crucial.

The identification of the expected impacts from the IP implementation is performed based on the described specific activities and facilities and the results from the consultations with the project stakeholders.

The results from the consultations performed as part of the procedure in trans-border aspect have also been analyzed and used in the identification and later on in the assessment of trans-border impacts.

Based on the data from the performed field investigations, the available archive information on the state of the environment in the IP impact area and the consultations with the stakeholders, the sensitive areas have been determined. The investment proposals in the site area have been considered during the identification of the cumulative impacts.

The expected impacts on each component of the environment as result from the impact factors are separately determined (in the sub-items of Section 4 – Impacts assessment, of this report).

Degree (Size) Magnitude of impact

The impact magnitude is usually represented by qualitative and quantitative values, compared to local, national and international standards. For some impacts values/parameters are not applicable. In such cases the assessment is subjective and is based on the experience of the expert and the good practice. In emergency cases (catastrophes, natural disasters, accidents) the impacts are examined in relation with the probability for the event and its consequences.

Generally, the Degree (Size) Magnitude of impact criteria can be considered in terms of:

- Time, for example duration of restoration or impact;
- Space, according to the physical scope of impact, or
- Quality and quantity, when parameters for the condition of the component/factor can be applied.

The specific criteria for each component/factor are described in the methodology for impact assessment for this component/factor.

For the project a 5-degree scale for the impact has been applied, shown in the impact assessment matrix.

Sensitivity of the receptors/resources

For the purposes of the impact assessment an evaluation of the quality of the impact receiver, called a receptor has been made. Receptors are the people, animate and inanimate nature (such as flora and fauna, water, air, soils, landscape), as well as the objects of the social environment (cultural heritage, resources, infrastructure, etc.).

In the assessment process the sensitivity/importance of each receptor has been determined by using individual qualitative and/or quantitative criteria, defined separately for each component/factor of the environment. These criteria represent the specific characteristics of the receptor in terms of:

- Current state of the receptor – geographical distribution, presence and abundance, value (conservation status), etc.
- Restoration capacity/Stress resistance;
- Restoration period, etc.

All these factors determine the sensitivity of the receptor. For the project a 5-degree scale for the sensitivity/importance of the receptors has been applied, shown in the impact assessment matrix.

Impact assessment

The expected impacts during the IP implementation are diverse and can be defined in various ways. The expected impacts for the project have been assessed as:

- Positive and negative depending on the final effect;
- Reversible (for a certain period of time) and irreversible (permanent);
- Short-, mid- and long-term;
- Direct and indirect;
- Primary and secondary;
- Local, regional, national and trans-border;
- Resulting from routine activity or from accidents.

In addition to the above impacts the potential cumulative impacts have been identified and assessed in the EIAR as well. They can result from various interactions:

- With accumulation – the overall effect from various impacts on the same receptor;
- During interaction – different impacts interact to produce a new significant impact;
- The effect of adding – the effect from the proposed development and other existing or planned projects nearby;
- In time – a series of impacts occurring at different times, which are not individually important, but together they represent a significant impact for the period.

The assessment of the impacts on the receptors/receiving environment is performed considering the sensitivity/value of the receptor or resource, the magnitude/size of the impact, summarized in the following matrix:

Fig. 5.2.0-1 Sample matrix for impact assessment

Degree / Size / Magnitude of impact		Sensitivity of the receptor/Value of the receptor or resource				
		A	B	C	D	E
		Very low	Low	Medium	High	Very high
1	Very low					
2	Low					
3	Medium					
4	High					
5	Very high					

The importance of the impact assessed using the matrix on fig. 5.2.0-1 does not account for the implementation of measures to mitigate impacts. The matrix defines the importance in three main groups:

The red color marks impacts with high importance (unacceptably high);

The yellow color marks impacts with medium importance (impacts which need to be proven acceptable under certain conditions);

The green color marks impacts with low importance, which does not exclude the need for proposing/planning of mitigating measures.

Clear distinction between these groups, however, is not possible and in many cases the final assessment of the impact importance falls somewhere in-between them.

As the assessment of the impact importance is not an exact discipline, the application of a simple approach with numbers or qualitative indicators in the assessment process is not always possible. Sometimes the assessment is subjective and is based on observations or the individual professional opinion of the expert or third parties.

Considering that, a multidisciplinary approach to the assessment of the impacts from the project has been adopted. This approach uses the expert conclusion, based on their many years of experience, to verify the result from the above presented matrix.

In some cases, where suitable, the risk for the environment as depending on the importance of the impact and the probability of its occurrence has also been determined. As with the importance, the degree of risk is determined in three groups:

- Significant, not acceptable for the environment;
- Acceptable risk, for which mitigating measures should be planned;
- Low risk, for which there is no need to plan mitigating measures.

Mitigating measures

Another important aspect of the impact assessment is to propose measures and ways to reduce the identified and assessed risk for the environment. An iterative approach has been applied in determining the mitigating measures for the project. Initially, an assessment has been made based on the technical documentation submitted by the Contracting Authority (presented in a table in the Introduction) and the impacts which require mitigating measures have been determined. After the development of suitable measures, the expected impacts have been reassessed, this time taking into account the proposed measures. In some cases the mitigating measures planned in the project technical documentation are complemented by measures proposed by the EIA experts.

Residual impacts

The impacts which remain after the mitigation are defined as residual impacts. They are described in the EIAR chapter 4 and are included in the Plan for management and monitoring of the natural and social environment (chapter 6). The Contracting Authority must consider them together with other costs and benefits (such as ecological or social improvements, employment or economic development) when deciding whether the project should continue and under what conditions.

The specific characteristics of the component approach are presented in the following sub-items of this chapter.

5.2.1 Description of the investment proposal

- Development and description of the technology for RAW treatment to achieve size reduction;
- Waste transportation scheme;
- Quantities and concentrations of the generated radioactive and non-radioactive waste gases, waste waters, solid waste, energetic pollutants. Comparison with the normative requirements and the best available techniques;
- Type and efficiency of the purification facilities.

5.2.2 Alternatives

- Study on the Best Available Techniques (BATs) for each technological solution and the main technologies or the general technology;
- Ecological assessment of the alternative locations of the investment proposal in reference to the requirements to the sites for layout of waste treatment facilities;
- Ecological assessment of the RAW transportation alternatives;
- General assessment of the proposed alternatives for implementation of the investment proposal.

5.2.3 Atmosphere and ambient air

- Collection and systematization of available information on the organized emission sources – technical characteristics of the emitting equipment, available purification facilities and purification efficiency, data on the flue gases, concentration of pollutants in flue gases, spreading of air pollutants.

- Collection and systematization of statistical information on the transport vehicles – type and number of motor vehicles. Calculation of the transport emissions using methods approved by MEW.
- Analysis and assessment of the available database on the emissions of harmful substances gathered through own or control measurements, as well as using approved calculation methods. In order to assess the emissions, limit values for emissions of harmful substances discharged to the atmosphere from point-source emissions, approved with Regulation No 1/27.06.2005, are used.
- Collection and systematization of information on the ambient air status in the region of the IP. Analysis and assessment of the available database on the ambient air quality.
- In order to assess the ambient air quality, maximum allowable limit values for airborne contaminants in settlements ambient air, approved with Regulation № 14 from 23.09.1997 (maximum allowable limit values for airborne contaminants in settlements ambient air), Regulation 12/15 July 2010 on limit values for sulfur dioxide, nitrogen dioxide, particulate matter, lead, benzene, carbon monoxide and ozone in ambient air, prom. SG 58/30.07.2010, are used.
- Results and conclusions from the Analysis of the dose burden for the population in the KNPP 30 km monitored area from the gas aerosol and liquid radioactive releases in the environment from the decommissioning of Units 1-4 and the emissions from the Plasma melting facility (PMF, Project 5c) operation, including modeling, pursuant to the MEW recommendations (Letter Ref. OVOS-277/2012).

5.2.4 Surface waters

Quantitative assessment:

- General characterization of the surface waters – identification, representative periods;
- Soil characteristics as a factor in the formation of surface flow;
- Climatic factors influencing the formation of the flow and the variation of the water balance;
- Seasonal and annual course of the flow of water bodies on the territory of the region – assessment of the extreme and average values;
- Characteristics of river flow, associated also with the industrial activity, determination of the water balance;
- Erosion intensity of the catchment area;
- Water sources associated with industrial activity.

Qualitative assessment of the surface waters:

- Background surface water status;
- Existing sources of river flows pollution;
- Use and assessment of the existing water information database;
- Comparative analysis of specially gathered information to previously gathered information;
- Influence of the water quantity on the qualitative characteristics;
- Determination of locations for future monitoring of water quality;

- Relation and influence of the ground waters on the qualitative characteristics;
- Possible sources of contamination of surface water - industrial, municipal, rain.

5.2.5 Ground waters

- Analysis of the existing information regarding the influence of physical, geographical and geological factors on the hydrological isolation of groundwater in the area concerned;
- Analysis, comparison and evaluation of information databases in state and other information centers (MEW, ExEA, private centers and others) related to the qualities of the ground waters, with the nature of the IP.

5.2.6 Soils

The main methods for assessment of the land and soils are the systematic ecological analysis and synthesis of data, facts and literature on the problem. In the summary of data and the conclusions the existing normative documents, laws, ordinances and regulations are applied. In addition to that, the following activities are executed:

- visits and field study;
- analysis of map materials and diagrams;
- analysis of the documentation;
- analysis of scientific literature;
- comparative analysis with the normative documents;
- synthesis of the analyses results and preparation of expert assessment;
- comparative analysis of existing data about the soil on site to the literature data, in terms of soil fertility and category of agricultural land;
- comparative analysis of the intended reclamation to the normative documents and the biological requirements for the species that can be used in the reclamation process;
- comparative analysis of literature data to the data provided by the designers in terms of the basic rock, land masses and soils in relation to the possibilities of linear erosion or deflation on the track of the object.

5.2.7 Geological foundation, earth bowels and mineral diversity

- Analysis of known published literature;
- Getting to know the stock reports on geology;
- Analysis and evaluation of the preliminary engineering and geological studies of the sites made by the Contracting authority.
- Landscape;
- The analysis and the impacts assessment have been made on Landscape and ecological assessment of the territory (identification, classification);
- Landscape and aesthetical assessment of the territory.

5.2.8 Natural sites –Protected territories and Protected areas

In regard to the Protected territories and the Protected areas, the assessment complies with the National plans and strategies for preservation of the biological diversity, taking into account all the requirements of the Bonn and Ramsar conventions, as well

as the Convention for preservation of the wild European flora and fauna and the natural habitats. In the EIAR elaboration the following methodological approach is implemented:

- Determination of the scope of impact based on the data for the distribution of atmospheric pollutants, as well as potential contamination of water objects.
- Building of a database of primary information using data from the Register of the Protected territories, objects declaration orders, Internet sources, data from existing studies on individual components of natural ecosystems in protected areas.
- The assessment of the expected significant effects on protected areas, wetlands, ornithological important areas, etc. as a result of the IP implementation is performed according to the Protected Territories Act, the Biological Diversity Act, the respective conventions, as well as other existing legal documents - laws, regulations, rules for individual components of the environment - air, water, soil.
- Indication of recommendations and measures for prevention, mitigation or, where possible, termination of significant harmful impacts on the Protected territories and the Protected areas form EN NATURA 2000.

5.2.9 Flora and vegetation

- The existing information sources on flora and vegetation are reviewed (scientific publications, conducted investigations, photos, maps, national and international normative documents and other information sources related to the rational use and protection of the vegetation resources and the biological diversity). Published materials on the condition of flora and vegetation in the territory affected by the IP are analyzed and field investigations are conducted to assess the condition of critical areas.
- Taxonomic affiliation and geographical distribution of plants are determined using the flora of Bulgaria (v. I-X, 1962 – 1994), Identification guide of the higher flora in Bulgaria (Kozhuharov and others, 1992) and Synopsis of the higher flora of Bulgaria (Assiov and others, 2002). Syntaxonomic origin of plant communities is determined using Synopsis of the plant communities in Bulgaria (Apostolova, Slavova, 1997) and publications on syntaxons in different parts of the country after 1995.
- When performing field investigation of the vegetation the ecological-phytocenotic investigation method is applied in key (characteristic) areas. Depending on the purposes, the floristic composition of plant communities is described and a qualitative assessment of the phytocenotic structure or a quantitative evaluation of the structure and the quantitative species ratio is performed. In more detailed investigations abundance of species can be assessed using the "coverage" indicator or the cover-abundance scale of Brown-Blanke and others (Pavlov, 2006).

5.2.10 Fauna

- In the present study field and cameral methods are used.

- One field investigation was performed in October 2011 by transect walking of the site and its vicinities using the routing method.
- Available literature sources are used.
- The investigations are performed based on the normative requirements of the Bulgarian ecological legislation, adapted to the European legislation – Environmental Protection Act, Biological Diversity Act and Protected Areas Act with all documents related to them.

5.2.11 Cultural, architectural, historical and archaeological heritage

The analysis and EIA have been made based on:

- Identification of the immovable cultural monuments;
- Updating of lists; consultations with local museum specialists, as well as with responsible persons and specialists from the National Institute for Monuments of Culture (NIMC), the National archaeological institute (NAI) with museum and BAS NMH;
- Mapping of immovable cultural monuments;
- Comparison with the IP parameters directly related to cultural heritage.

5.2.12 Health risk

In the assessment of the general health status of the population the following are used:

- Statistics and analyzes of morbidity in GP visitations. The classic indicators are considered - frequency and structure of morbidity. The data is compared to the average values for the country and are analyzed in relation to the: a) the environmental conditions whereby data from a long enough retrospective period are used; b) social status of the population; c) geographical characteristics of the area.
- Statistics for mortality rates from local or national analyzes (if available).
- Information from the local medical and prophylactic institutions.
- Literature data on the health effects of specific pollutants.
- Results and conclusions from Analysis of the dose burden for the population in the KNPP 30 km monitored area from the gas aerosol and liquid radioactive releases in the environment from KNPP Units 5-6, from the decommissioning of Units 1-4 and the emissions from the Plasma melting facility (PMF) operation including modeling, pursuant to the recommendations of MEW letter No. OVOS-277/ 2012).

The assessment of the health status of the workers is performed according to the data on morbidity with temporary disability by frequency, severity and structure of morbidity. Analysis of these data in relation with the work environment factors and the work process; data from the results of prophylactic examinations and analysis with the work environment factors; analysis of occupational diseases; analysis of occupational accidents; literature data and data from own investigations on the health effect of the work environment factors and the work process

The forecast for the impact of changes in the environment and the working environment is made by extrapolation of the present health status data and the possible changes caused by the IP.