CHANGES FROM THE DRAFT STUDY REPORT TO THE FINAL STUDY REPORT

CHOOSING A WAY FORWARD
THE FUTURE MANAGEMENT OF CANADA'S USED NUCLEAR FUEL

October 2005

Nuclear Waste Management Organization

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1. INTRODUCTION

In November 2005, the Nuclear Waste Management Organization (NWMO) submitted its Final Study Report, *Choosing a Way Forward, The Future Management of Canada's Used Nuclear Fuel,* to the Minister of Natural Resources Canada. The Final Study Report and recommendation is available at the NWMO website www.nwmo.ca.

The purpose of this document is to outline the key areas in which the NWMO's Final Study Report was modified from the Draft Study Report released earlier in the year.

Draft Study Report

In May 2005, the NWMO issued a Draft Study Report *Choosing a Way Forward* for public review and comment. The draft report is available at the NWMO website www.nwmo.ca. The draft report reflects a synthesis of over two years of engagement with citizens and specialists on approaches for long-term management of Canada's used nuclear fuel. The NWMO's draft recommendation to the Government of Canada is Adaptive Phased Management.

After release of the draft report, the NWMO continued its dialogue with interested Canadians specifically to receive their comments, suggestions and concerns about the proposed recommendation. NWMO incorporated the insights from the dialogue into a refinement of the final report.

Key Areas of Modification

The key changes from the draft report to the final report include:

- Updates, to complete the NWMO's reporting of comments from the Aboriginal and public dialogues, and study activities undertaken to complete the NWMO study process;
- Elaboration, in subject areas of significant public interest as demonstrated through our Aboriginal and public dialogues;
- Elaboration, in subject areas proposed by the Advisory Council for fuller discussion in the Final Study Report;
- Clarification, on issues that generated questions and inquiry in the NWMO's dialogue with Canadians;
- Responsiveness, to suggestions put forward during public reviews of our Draft Study Report; and
- Factual additions, legislative and regulatory information, and recent announcements in Canada and developments in other jurisdictions which are concerned with radioactive waste management.

In addition, the NWMO has introduced some structural changes and reordering of subject material in the final report, plus minor editing of the text with a view to reducing duplication and improving the overall flow and readability of the document. As much as possible, the NWMO

sought to retain the content from the chapters and sections originally presented to Canadians in the draft report.

The following section presents the key changes to the draft report in tabular format.

2. KEY CHANGES TO THE DRAFT STUDY REPORT

Table 1: Key Changes from the Draft Study Report to the Final Study Report

Final Report Chapter	Final Report Section	Changes from Draft Study Report (DSR) to Final Study Report (FSR)
Part One	**A Responsible Path: Our Conclusions**	
Chapter 1	**A Responsible Path: Our Conclusions**	
	1.1 Introduction	• Clarification of the current status and the location of used nuclear fuel management in Canada. • Elaboration of NWMO's position of the need to contain and isolate used fuel from people and the environment essentially indefinitely. • Brief discussion of the Seaborn public review process for nuclear waste management and the Government's legislative response to the Seaborn report and the formation of the NWMO.
	1.2 The Foundation	• Text drawn from DSR section 1.3 *First Principles*. • Elaboration of NWMO's mission, in particular what the NWMO means by a long-term management approach which is "socially acceptable", "technically sound", "environmentally responsible" and "economically feasible". • Discussion of the NWMO study process and engagement with Canadian citizens. • Further discussion of ethics and values, and the over-arching need to ensure safety and security.
	1.3 An Important Question of Context – the Future of Nuclear Power	• Text drawn from DSR section 1.7 *Concluding Thoughts*. • Discussion of the impassioned arguments that the NWMO heard about energy policy and the future of nuclear power in Canada. • Clarification of NWMO's study process and evaluation of options within the context of the future of nuclear power.

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	1.4 The Technical Possibilities	• Minor editorial change. • The subsection *Evolution of a Fourth Option* was moved to FSR section 1.5 *The Evolution of Another Approach*.
	1.5 The Evolution of Another Approach	• NWMO's recommendation is an alternative management approach – Adaptive Phased Management. • Added listing of the key attributes of Adaptive Phased Management. • Clarification of the various activities associated with the three phases of implementation for Adaptive Phased Management. • Added description of the land requirements for the surface and underground facilities at a central site. • Added description of the number of transportation shipments of used fuel from the reactor sites to a central facility for long-term management. • Provided greater emphasis to the "illustrative" nature of the timelines.
	1.6 The Assessment	• Text drawn from DSR section 1.5 *A Fourth Option: Adaptive Phased Management*. • Added feedback from the NWMO's dialogue with Canadians concerning the balance between moving cautiously to allow for new learning and social confidence, and sustaining sufficient momentum to carry forward with implementing the approach to its completion.
	1.7 Further Reflection	• New section. • Added the NWMO's response to a number of comments and questions raised by Canadians about the recommendation. These include: o Is Adaptive Phased Management not really the same as Option 1, Deep Geological Disposal? o Why such a long timeframe? o Isn't the optional step of shallow storage just a waste of time and money? o Why not keep the used fuel at the reactor sites and avoid the risks associated with transportation?
	1.8 The NWMO's Commitment to Implementation	• New section. • Elaboration of the key features associated with NWMO's planned implementation of Adaptive Phased

Final Report Chapter	Final Report Section	Changes from Draft Study Report (DSR) to Final Study Report (FSR)
		Management. • Provided a summary of roles, responsibilities, financing, governance and institutions, citizen engagement, siting, research and intellectual capacity, and NWMO's intentions of a collaborative process of decision making.
	1.9 The Recommendation	• Text drawn from DSR section 1.2 *The Recommendation.* • Clarification that the provision for an interim step of shallow underground storage of used fuel at the central facility is optional. • Added emphasis that NWMO will implement the management approach selected by government consistent with the intentions articulated in FSR section 1.8 *The NWMO's Commitment to Implementation*.
	1.10 Concluding Thoughts	• Text drawn from DSR section 1.7 *Concluding Thoughts.* • Minor editorial change. • Added NWMO's final conclusion: the knowledge that we have today is more than adequate to start down the path of long-term management of Canada's used nuclear fuel.
Part Two	**Response to Legislated Study Requirements**	
Chapter 2	**Response to Legislated Study Requirements**	New chapter which presents the NWMO's study requirements from the *Nuclear Fuel Waste Act.*
	2.1 Review of Study Requirements	• Added a detailed listing of the NWMO's study requirements from *Nuclear Fuel Waste Act (NFWA) (An Act Respecting the Long-term Management of Nuclear Fuel Waste)* which was brought into force by the Government of Canada in November 2002.
	2.2 Our Interpretation of "Management Approach"	• Text drawn from DSR Chapter 5 *The NWMO Study*. • Clarified that NWMO's description of the "management approach" which includes both a technical method and an overarching management system.
	2.3 Study Contributions of the Advisory Council	• Provided a brief description of the independent review, comments and on-going guidance provided by the Advisory Council to the NWMO.
Part Three	**What Canadians Said**	
Chapter 3	**How We Approached Canadians**	• Formerly Chapter 2 in DSR.

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	3.1 A Responsive Study Process	• Revision to reduce duplication. The list of bullets which had appeared on pages 31-32 of the *DSR* have been removed. • Minor revision to Figure 2-1, now Figure 3-1, to better reflect that each phase of work in the NWMO study included a range of dialogue activities as well as milestone documents. • Revision to Figure 2-2, now Figure 3-2, to better reflect the range of techniques used over the course of the study.
	3.2 The Road Travelled – the NWMO's Process of Collaborative Development with Canadians	• Updated to include recent activities in the description of the study process. Addition of final section outlining how NWMO continued the dialogue around the *Draft Study Report* and draft recommendation. • Minor modification to format for the tables to include bolded text to assist in quick scanning by reader.
Chapter 4	**What People Told Us**	• Formerly Chapter 3 in DSR. • Updated to report on the comments received through NWMO's dialogues on the *Draft Study Report* and draft recommendation, Adaptive Phased Management. • Major modifications: o Eliminated some duplication. o Restructured the chapter to improve readability, now divided into four major sections, the first three of which are roughly correspond with dialogues associated with each of NWMO's milestone documents: o 4.1/ Dialogue 1 – Asking the Right Questions o 4.2/ Dialogue 2 – Understanding the Choices o 4.3/ Dialogue 3 – Choosing a Way Forward o 4.4/ The NWMO's Observations o Added comments concerning Adaptive Phased Management, as outlined in the *Draft Study Report*, in new section: Dialogue 3 – Choosing a Way Forward. o Refined reporting on the insight from Aboriginal Dialogues to better reflect the large number of reports from Aboriginal organizations which have been filed with the NWMO since the writing of the *Draft Study Report.* Note that a fuller summary of input has been prepared under separate cover as an important adjunct to this report. (insert URL)

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	4.1 Dialogue 1 – Asking the Right Questions?	• Minor editorial change only with exception of the section entitled "Early Insight from the Aboriginal Dialogues", which has undergone substantial revision in order to report in more detail the input received.
	4.2 Dialogue 2 – Understanding the Choices	• Minor editorial change and word changes in some headings to increase clarity.
	4.3 Dialogue 3 – Choosing a Way Forward	• New section designed to summarize what the NWMO heard about Adaptive Phased Management as outlined in the *Draft Study Report*.
	4.4 The NWMO's Observations	• Modified in response to dialogue on the *Draft Study Report*.
Part Four	**The Assessment**	
Chapter 5	**Technical Methods Considered in Our Study**	Formerly Chapter 7 in DSR.
	5.1 Our Initial Screening of the Options	• Clarified the description of reprocessing, partitioning and transmutation and its potential role in managing used nuclear fuel. • Clarified the rationale as to why NWMO concluded that reprocessing, partitioning and transmutation is considered to be highly unlikely at this point in time. • Added a note that the NWMO has received additional suggestions from Canadians on long-term management options for used nuclear fuel.
	5.2 Methods Considered in Out Study	• Minor editorial change.
Chapter 6	**Technical Description of Approaches**	Formerly Chapter 8 in DSR.
	6.1 The Development of Technical Designs	• Clarified the development of technical designs for both deep geological technology concepts and storage technology concepts since the 1970's.
	6.2 Engineering Concepts for the NWMO Study	• Added listing of technical design changes to the AECL disposal concept since the issuance of the Seaborn report in 1998. • For clarity, changed "underground research laboratory" to "underground characterization facility", where appropriate. • Provided more emphasis on "illustrative" nature of the implementation schedules. • Provided a description of current storage technology for used fuel – well researched, designed, constructed,

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		licensed and operated in Canada and internationally for many decades. • Clarified the basis for the projected number of used fuel bundles in Canada. • For the description of each management approach in the tables, provided more information in subject areas of particular public interest: o Added text to clarify used fuel responsibilities amongst the current waste owners and the NWMO. o Added detail on number of trips for each mode of transportation of used fuel. o Added land requirements (footprint) for long-term management facilities. • For Adaptive Phased Management: o Added NWMO's rationale for the inclusion of sedimentary rock as a potentially suitable host rock formation for a deep geological repository based on studies and analyses from 1977 until 2004; o Clarified that more R&D on sedimentary rock would need to be completed to support the potential suitability of these sedimentary rock formations for a deep geological repository; o Added key decisions which may affect the implementation schedule; o Added description of activities for decommissioning the optional shallow underground storage facility and for decommissioning the underground characterization facility; o Added reference to a background paper on *Adaptive Phased Management Technical Description* available on the NWMO website.
Chapter 7	**Economic Regions for Implementation**	Formerly Chapter 9 in DSR.
	7.1 What We Can Learn from Economic Regions	• Minor editorial change.
	7.2 Specification of Economic Regions	• Minor editorial change. • DSR section 9.3 *Siting Principles and Other Factors* moved to FSR section 9.4 *The Site Selection Process.*
Chapter 8	**Comparison of Benefits, Risks and Costs**	• Formerly Chapter 4 in DSR. • Key changes: o Substantial modification to the sections which

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		describe the process used to conduct the assessment, in order to communicate more clearly. o Added discussion to the advantages and limitations considered in the assessment of options, particularly with regard to the Adaptive Phased Management approach. This in response to concerns about the approach raised during the dialogue which had not been well considered by the NWMO in its assessment.
	8.1 Study Foundations: The Building of an Assessment Framework 8.2 Streams of Analysis	• Revised the description of the assessment process to better communicate its iterative and inclusive dimensions. • Revised Figure 8-1 to better describe the assessment process.
	8.3 Assessment of Costs	• Moved discussion of the assessment of costs forward in the chapter. It had previously appeared as part of the assessment against the "Economic Viability" objective. • Modified former Figure 3-9 through 3-12, now presented as Figure 8-2 through 8-6 to improve clarity. The cumulative costs which appeared in each of the original figures now summarized in a single figure. Consistent vertical scales now used for Figures 8-3 through 8-6.
	8.4 Our Assessment Findings	• Added to the assessment tables and analysis discussion of some of the concerns about the Adaptive Phased Management approach raised during the dialogue, which had not been well considered by the NWMO in its assessment. • Added brief discussion about the safety of transportation and the NWMO's rationale for judging the risk associated with transportation to be small. • Moved the influence diagrams, or bubble diagrams, to Appendix 8. Inclusion in an appendix, rather than in the body of the report, reflects their importance as supporting documentation for some of the assessment related activities associated with Phase 2 and Phase 3 of the study process.
	8.5 The Preferred Approach and Possible Future Scenarios	• New section added in response to questions and concerns expressed in dialogues.
Part Five	**Implementation**	
Chapter 9	**Foundation for Implementation**	• Reorganized discussion of implementation now as Part Five of the report, presenting the following as important components of an implementation plan: governance and institutions, financial considerations, engaging citizens,

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		effects management, research and building of intellectual capacity, and timetables for implementation. • This chapter formerly Chapter 11 in DSR. • Added to the original two pages of text from the *DSR* to: o Outline the fundamental underpinnings for implementation; and o Provide elaboration on areas of interest that emerged in the public dialogues, including more clarity on how the NWMO would propose to proceed with implementation.
	9.1 Key Features of Implementation Plans	• Minor editing of text throughout.
	9.2 Engaging Communities of Interest	• Extended the discussion that originally appeared in Chapter 15. • Added discussion to clarify what the NWMO means by 'communities of interest' in the context of an implementation process.
	9.3 "Consultation" with Aboriginal Peoples	• Added discussion of the importance that the legal requirement for 'consultation' with Aboriginal peoples is addressed in any implementation plan.
	9.4 The Site Selection Process	• Added discussion of siting as a critical element of the implementation of any centralized approach selected: o Added elaboration on how NWMO would seek a "willing host community"; o Added elaboration on commitment to initiate a "collaborative design of a siting process", to commence following a government decision on a management approach. The section outlines some of the key questions and issues to be addressed in the design of a siting process, as identified through dialogue with specialists and citizens; and o Moved the original discussion of Siting Principles and Scientific and Technical Siting Factors (formerly found in Chapter 9) into this chapter to complete the discussion on siting.
	9.5 Managing Implementation	• New section to provide more information on the functional activities that NWMO will be engaging in, including those required by the *NFWA*. Among the areas identified for NWMO work are: o Enhance understanding of how to "manage community impacts"; o Technical and scientific research (drawing from former Chapter 15); o Further work required on financial provisions

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		(drawing from former Chapter 11). • Include discussion of the type of organizational change which the NWMO will undergo in order to prepare to implement the management approach selected by the Government of Canada.
Chapter 10	**Governance and Institutions**	• Formerly Chapter 12 in *DSR*.
	10.1 The Government of Canada	• Minor editorial changes only.
	10.2 Natural Resources Canada	• Minor editorial changes. Reference to clauses in the *NFWA* omitted in favour of reproduction of Act in its entirety in Part 2 of the report.
	10.3 Canadian Nuclear Safety Commission	• Addition of minor factual references concerning CNSC role, safeguards and the licensing process in order to increase clarity.
	10.4 Transport Canada	• Minor editorial changes only.
	10.5 Provincial Governments and Regulators	• Minor editorial changes only.
	10.6 Major Nuclear Fuel Waste Owners	• Revised heading to clarify the focus of discussion in the section. Reference to clauses in the NFWA omitted in favour of reproduction of Act in its entirety in Part 2 of the report.
	10.7 Nuclear Waste Management Organization (NWMO)	• Elaborated on discussion to better describe the implementation process led by NWMO. • Omitted reference to clauses in the NFWA concerning the Advisory Council, in favour of reproduction of Act in its entirety in Part 2 of the report.
	10.8 Host Communities	• Refined discussion of the role of “communities” to ensure consistency with discussion on the same topic in rest of report.
	10.9 Affected Aboriginal Peoples	• Refined discussion of the role of “Aboriginal organizations” to ensure consistency with discussion on the same topic in rest of report.
Chapter 11	**Financial Aspects**	Formerly Chapter 18 in DSR.
	11.1 Funding Formula	• Minor editorial enhancements and reordering of paragraphs made throughout to improve clarity. • Added elaboration on the following topics, for clarity and to address more fully existing provisions for financial surety, including: o Outlined the components of total cost estimates for
	11.2 Financial Surety	

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		the management approaches; o Provided clarity on the long-term management costs that will be the basis of the financial formula (without cost of interim storage); o Explained "constant dollar" and "present value" cost estimates; o Added reference to continued work proposed, to factor into the designs and costs the potential impacts of climate change and other natural events; o Clarified assumptions on average life expectancy of reactors; and o Updated discussion on financial guarantees – to reflect new developments and provide more context. • Expanded discussion of *Nuclear Liability Act* (with additional detail added to Appendix 5).
Chapter 12	**Services Provided to Other Owners of Nuclear Fuel Waste**	• Formerly Chapter 17 in DSR. • Minor editorial refinement throughout. • Minor revision to discussion of arrangements by which AECL will contribute its cost share. • Added factual elaboration on research reactors generating used nuclear fuel to include new: o Map and table with locations and names of research reactors in Canada; and o Table on types and volumes of used fuel generated, and how it is currently managed.
Chapter 13	**Continuing the Collaborative Process of Dialogue and Engagement**	• Formerly Chapter 15 in DSR. • Significant expansion of discussion: o Added discussion to provide greater clarity on the recommended focus of public engagement in the next phase; o Moved some components of this chapter as it appeared in the *DSR* to Chapter 9 (discussion of "communities of interest", collaborative implementation approach); and o Moved some components of this chapter to Chapter 10 (discussion of NWMO's role, legal/regulatory requirements for consultation).
	Introductory section	• Amended to reflect the broader justification for NWMO's commitment to continuing and active engagement of citizens and specialists;
	13.1 Setting the Context for Effective Engagement	• Revised to provide a fuller discussion of the context for engagement: the need to be based on ethical principles and built on the key understandings which have emerged from the study.

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	13.2 Engagement as an input to Decision-Making	• Added new section, intended to provide elaboration on the nature of the engagement which is being proposed and role in decision-making at multiple points in the implementation process, using Adaptive Phased Management for illustration.
	13.3 Incorporating Evolving Best Practices	• Added to the original discussion of drawing from international experience, to better reflect the importance attached to monitoring and incorporating best practices into decision-making.
	13.4 Comparing the Management Approaches	• Added new section which recommends that implementation of any management approach selected, whether it be the Adaptive Phased Management approach or other approach, should be accompanied with the type of implementation plan outlined in the chapter.
Chapter 14	**Addressing Social, Economic and Cultural Effects**	• Reordered sections in *DSR* to improve the flow of discussion. • Expanded the discussion of the means by which effects might be managed for the purpose of responding to suggestions from the dialogue, including those made by reactor site communities. • Added throughout the chapter, a clearer statement of the NWMO's commitment to working closely with communities to manage socio-economic effects.
	14.1 The Context	• Contains much of the text which had been included in the introductory section of this chapter in the *DSR*. • Added a clearer and more explicit commitment to working with communities in both the design of citizen engagement in decision-making and in the design of approaches to manage effects to contribute to a community's vision for long-term sustainability. • Added explicit reference to the sustainable livelihoods framework, a framework designed to address the different dimensions of well-being in terms of social, human, financial, physical and natural capitals, which affect a community's adaptive capacity. This material drawn from Background Paper 9-2.
	14.2 What are the Potential Socio-Economic Effects?	• Added discussion to more clearly reflect anticipation that socio-economic effects may occur both within the host community, within communities which currently host interim storage facilities, and beyond these communities. • Moved the former Table 4-10 from this section to later in

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		the chapter.
	14.3 The Particular Issue of Long-Term Community Sustainability	• Added discussion to reflect the NWMO's commitment to working collaboratively with communities.
	14.4 Actions to Address Socio-Economic and Cultural Effects	• Added discussion concerning types of measures to address possible effects. More extensive discussion provided of some traditional measures to address effects, such as: establishing and maintaining trust, managing community change, enhancing benefits, avoiding/minimizing adverse effects. This material drawn from Background Paper 9-3. • Added a more elaborated discussion of measures to address potential socio-economic and cultural effects by project activity. • Added discussion to reflect the NWMO's commitment to working collaboratively with communities to identify and manage socio-economic effects.
Chapter 15	**Research and Intellectual Capacity**	Formerly Chapter 16 in DSR.
	15.1 The Important Role of Research	• Added NWMO's ethical obligation to undertake research on social impacts.
	15.2 Research Requirements Common to All Management Approaches	• Clarified that "research" includes both "social" and "technical" research. • Clarified that research and development (R&D) will include further study and analyses of potential impacts of climate change and other natural events on the planned long-term management facilities for each management approach.
	15.3 Research Specific to Individual Management Approaches	• For Adaptive Phased Management: o Added discussion that more R&D on sedimentary rock would need to be completed to support the potential suitability of these rock formations; and o Clarified that R&D expenditures anticipated for Phase 2 at the underground characterization facility are about $30M/year.
Chapter 16	**Description of Activities and Timetables**	• Formerly Chapter 13 in DSR. • Added text describing Canada's international obligations to safeguard used nuclear fuel. • Added that the various implementation schedules for each management approach are "illustrative". The schedules are based in part on the siting experiences in other countries such as Finland and Sweden.

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	16.1 Option 1: Deep Geological Disposal in the Canadian Shield	• Removed specific years from the implementation schedule – more approximate estimates of the timelines are given in the figures. • Clarified responsibility for used fuel management amongst the individual waste owners and the NWMO during implementation.
	16.2 Option 2: Storage at Nuclear Reactor Sites	• Removed specific years from the implementation schedule – more approximate estimates of the timelines are given in the figures. • Clarified responsibility for used fuel management amongst the individual waste owners and the NWMO during implementation. • Provided emphasis that the implementation of Storage at Nuclear Reactor Sites would continue indefinitely beyond the 300 year timeline in the schedule.
	16.3 Option 3: Centralized Storage	• Removed specific years from the implementation schedule – more approximate estimates of the timelines are given in the figures. • Clarified responsibility for used fuel management amongst the individual waste owners and the NWMO during implementation. • Provided emphasis that the implementation of Centralized Storage would continue indefinitely beyond the 300 year timeline in the schedule.
	16.4 Option 4: Adaptive Phased Management	• Removed specific years from the implementation schedule – more approximate estimates of the timelines are given in the figures. • Clarified responsibility for used fuel management amongst the individual waste owners and the NWMO during implementation. • Elaborated on the key decisions which could affect the implementation schedule. • Added description of activity for technology demonstration in the underground characterization facility in Phase 2. • Added description of activity for decommissioning the optional shallow underground storage caverns. • Clarified the decommissioning and closure activities for

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		the deep repository. • Emphasized the flexibility in schedule for implementation. The "illustrative" schedule is intended to be conservative and provide for genuine choice. Clarified that: o Phase 1 timelines can be predicted with greatest accuracy; and o Phase 2 and Phase 3 timelines could possibly proceed much faster depending on the outcome of future decisions which cannot be known at this time.
	Appendices	
	1. NWMO Profile	• Text expanded to include brief biographies of NWMO Board members, Advisory Council members, International Panel, and members of the Roundtable on Ethics. • Added list of NWMO staff names.
	2. Nuclear Fuel Waste Act	• New appendix. • Provided the *Nuclear Fuel Waste Act (NFWA) (An Act Respecting the Long-term Management of Nuclear Fuel Waste).* The *NFWA* was brought into force by the Government of Canada in November 2002.
	3. Nature of the Hazard	• Added text on the linear-no-threshold hypothesis and reference recent international reports on this issue. • Clarified NWMO's position on the nature of the hazard from used nuclear fuel. • Included the full Participants Statement from the multi-disciplinary workshop which was conducted, as well as the individuals who participated.
	4. Status of Used Nuclear Fuel in Canada	• Now includes an updated discussion of used fuel inventory projections, to reflect most recent information: o Updated to reflect recent (2005) announcements about planned reactor refurbishment activities in New Brunswick and Ontario. o Added table to clarify Joint Waste Owners' projected used fuel inventories estimated in 2001 (3.6 million bundles) and the projected used fuel inventories estimated in 2004 (3.7 million bundles). • Added fuller description of the assumptions underlying projections of used fuel inventories.
	5. Regulatory Framework	• Modified text in two areas: o Added a new section to describe the *Nuclear Liability*

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		Act (it provides further description beyond that presented in Chapter 10). o Expanded discussion of safeguard commitments made by Canada under the Treaty on the Non-Proliferation of Nuclear Weapons.
	6. Nuclear Waste Management in Other Countries	• Minor modifications including: o Updated the status of nuclear waste management programs in different countries; and o Added information to aid understanding of the status of nuclear waste management programs in other jurisdictions.
	7. NWMO's Roundtable on Ethics	• Changes to this appendix benefit from Advisory Council suggestions. • Modified to more clearly portray the role of the Roundtable on Ethics in the study process, and the way in which NWMO has incorporated advice of the Roundtable on Ethics in the study. • Changes include: o Renaming of Appendix; o New introduction, explaining why NWMO set up Roundtable on Ethics; o Discussion of the ways in which the Roundtable on Ethics advice influenced the NWMO study process and substance; o Added comment, noting that the Roundtable on Ethics endorsed the NWMO's draft recommendation as a way of managing current and currently-planned used nuclear fuel.
	8. Influences for the Assessment of Management Approaches	• New appendix. • Moved the influence diagrams ("bubble diagrams"), first developed by the Assessment Team for each of the eight key objectives, from Chapter 8 to this appendix.
	9. Other Methods Considered	• Combined appendices 8 and 9 from the *DSR*, to bring into one appendix the discussion of "reprocessing, partitioning and transmutation" and other methods considered, and in so doing, reduce duplication. • Other modifications include: o Clarified the definitions of reprocessing, partitioning and transmutation for the readers. Inclusion of additional factual references; o Minor comments added to "methods of limited interest" to clarify why those methods were not considered further by NWMO; and o Added list of references to studies mentioned in this appendix.

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	10. Used Fuel Scenarios	• Additional information has been brought into this appendix. • Modifications include: o Added introductory section which reviews: NWMO's early scenarios work with the Scenarios Team (2003), which examined a wide range of possible futures; and the consideration that the Assessment Team gave to future scenarios in its preliminary assessment work (2004); o Updated discussion of used fuel inventory to reflect recent announcements in New Brunswick and Ontario regarding refurbishment of reactors; o Added more context to the Used Fuel Scenarios and description of potential impacts; and o Added list of technical references.
	11. Building the Information Foundation – Engagement and Research	• Combined the NWMO's public engagement and research appendices into a single appendix. The intent was to record in one place the full set of inputs for the study. • Other modifications include: o Updated list of background papers and engagement activities, since the release of the *Draft Study Report*; o Added list of individuals who made website submissions to the NWMO; and o Added a notation and asterisk (*) to identify those background papers that were of key significance in arriving at NWMO's conclusions and recommendations.
	12. Glossary	• Minor refinements: o Removed unused or otherwise unnecessary terms; and o Added terms and definitions omitted earlier.
	13. Acronyms	• Minor refinements.
		DSR Appendix 3 (Adaptive Phased Management Technical Description) has been removed from the FSR and put on the NWMO website as a stand-alone background paper.
	NWMO Advisory Council Report	
		• New section. • In the *Draft Study Report*, the Advisory Council presented a statement of how it intended to fulfill its legislated mandate. For the *Final Study Report*, that statement is replaced with the report of the Council, which includes its independent comments on the NWMO study and

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		management approaches.