APPENDIX III

SUMMARY OF ANSTO COMMITMENTS AND UNDERTAKINGS[1]

COMMITMENTS-CONSTRUCTION PHASE

EIS Reference	Environmental Commitments and Management Measures During Construction	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
Geology, Soils and Water (Chapter 8 of Draft EIS)			
	Management measures include: ▪ phasing construction to confine disturbance to areas of workable size and minimise duration of disturbance; ▪ maintaining natural vegetation to act as buffers to minimise erosion and sedimentation; ▪ locating stockpiles away from drainage lines and upstream of sedimentation structures and constructing diversion banks and/or catch drains to protect stockpiles from surface flows; ▪ utilising staked straw bales or siltation fences to restrict sediment movements within the site and prevent any movements off site; ▪ installing drainage works early in the construction period, diverting clean water flows around construction compounds and minimising flow velocities using energy dissipaters and scour protection where appropriate; ▪ constructing sediment ponds to minimise total volumes and peak discharge rates of run-off; and ▪ regularly maintaining all erosion, sedimentation and pollution devices to ensure effective operation, particularly after heavy rainfall.	▪ Impacts would be localised at the site of the replacement reactor and limited to the duration of construction. Management measures are those regularly implemented for construction projects of a similar scale.	▪ No change to Draft EIS conclusion. Timetable for environmental monitoring presented in *Chapter 18* of this Supplement noting dual (construction and routine) monitoring during the constructions stage.
Air Quality (Chapter 9 of Draft EIS)			
	Management measures include:		

1 Source: Environment Australia, *Environment Assessment Report: Proposed Replacement Nuclear Research Reactor at Lucas Heights*, February 1999, Appendix A.

EIS Reference	Environmental Commitments and Management Measures During Construction	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
	▪ minimising area to be disturbed and undertaking rehabilitation and/or revegetation as early as possible; ▪ prohibiting burning of timber and other combustible materials; ▪ ensuring all access routes to the site are paved; unpaved access routes to be regularly sprayed with water or treated with surface binding agents; ▪ covering all open trucks transporting materials, spoil and fill to and from the construction site; ▪ covering, damping down or stabilising stockpiles of materials, spoil and fill; ▪ fitting all vehicles with emission control devices to ensure compliance with Australian Design Requirements for vehicle type and year; ▪ using water sprays and tankers, especially during hot, dry, windy days; and ▪ washing the wheels of trucks before leaving the construction site.	▪ Impacts would be confined to within the buffer zone and would be related to short episodic events associated with prevailing weather conditions. Management measures are those regularly implemented for construction projects of similar scale.	▪ No change from Draft EIS.
Management of Reactor Products, Spent Fuel and Wastes (Chapter 10 of Draft EIS)			
Reactor Products	Not applicable.	-	
Spent Fuel	Not applicable.	-	
Emissions and Waste	Not applicable.	-	
Other Waste	Specific management measures would include:		
	▪ collecting all non-recyclable solid and putrescible material from the site and transporting them to the Lucas Heights Waste Management Centre; and ▪ removing recyclable materials from the waste stream and transporting these wastes to an appropriate waste recycling depot; and ▪ adopting a cradle-to-grave approach to managing waste generated during construction in accordance with the preferred hierarchy of minimisation, reuse, recycling and final disposal.	▪ Production of waste during construction is unavoidable. However, implementation of waste minimisation strategies would assist in reducing quantities generated.	▪ No change from Draft EIS.
Hazards and Risks (Chapter 11 of Draft EIS)			
	▪ Not applicable	-	-
Flora and Fauna (Chapter 12 of Draft EIS)			
	Specific management measures include:		

EIS Reference	Environmental Commitments and Management Measures During Construction	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
	▪ minimising disturbance to and removal of existing vegetation; ▪ checking for the presence of fauna and fauna habitat in trees, logs and under sandstone boulders prior to clearing; ▪ planting or seeding with native grasses and shrub species in fire protection zone and other disturbed areas; ▪ reusing mulch produced by bushfire hazard reduction activities in revegetation; ▪ implementing erosion and sedimentation control measures, concentrated around areas proposed for contouring within the fuel reduction zone; ▪ ensuring non-invasive native plant species for soil stabilisation and weed control; and ▪ ensuring vegetation removed during construction activities is mulched and used to aid in soil improvement where revegetation is to be undertaken; and ▪ ceasing work immediately if any endangered or threatened species are encountered during construction work and contacting the National Parks and Wildlife Service for further directions.	▪ Impacts would be localised to the site of the replacement reactor and associated bush fire fuel-reduced zone surrounding the site. Management measures are those regularly implemented for construction projects of a similar scale.	▪ No change from Draft EIS.
Planning and Land Use (Chapter 13 of Draft EIS)			
	▪ Not applicable	▪ No change to existing planning framework or land use during construction.	▪ No change from Draft EIS.
Traffic and Transport (Chapter 14 of Draft EIS)			
	Consideration would be given to: ▪ extending the existing left turn deceleration lane on New Illawarra Road; and ▪ providing a seagull intersection at the intersection of the entrance to the Lucas Heights Science and Technology Centre and New Illawarra Road.	▪ Short-term reduction in road safety at entrance to Lucas Heights Science and Technology Centre arising from increased heavy vehicle traffic.	▪ No change from Draft EIS.
Infrastructure and Services (Chapter 15 of Draft EIS)			
	Specific measures would include:		

EIS Reference	Environmental Commitments and Management Measures During Construction	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
	▪ implementing erosion and sedimentation controls for all construction activities associated with infrastructure development; and ▪ minimising disturbance to vegetation associated with installation of additional stormwater control facilities.	▪ Majority of infrastructure and services required for proposal already exist at the Lucas Heights Science and Technology Centre; ▪ with augmentation, existing infrastructure and services would meet the requirements of the proposal during construction; ▪ augmentation of some existing services required during construction, including additional stormwater retention ponds.	▪ No change from Draft EIS.
Social and Economic Impacts (Chapter 16 of Draft EIS)			
	▪ Ensure ongoing monitoring of the implementation of the environmental management measures during construction; ▪ Release information about the performance of the environmental management measures to the community during the process of developing and implementing the replacement reactor.	▪ Impacts would occur within the local community of interest and would be limited to the duration of construction.	▪ No change from Draft EIS.
Land Contamination (Chapter 17.1 of Draft EIS)			
	▪ Prepare a Remedial Action Plan for on-site remediation of identified hydrocarbon impacted soil in accordance with NSW Environment Protection Authority requirements; ▪ Conduct additional sampling and analysis for heavy metals arising from excavation of the southern section of the site of the replacement reactor. ▪ Incorporate strategies to deal with contaminated soils, including the Remedial Action Plan as part of the Construction Environmental Management Plan.	▪ Provided on-site remediation is undertaken and there is no off-site disposal of soils, impacts would be localised to the site of the replacement reactor and limited to the duration of construction. Management measures are those regularly implemented for sites having similar levels of contaminants.	▪ No change from Draft EIS conclusion.
Bushfire (Chapter 17.2 of Draft EIS)			
	Specific measures are:		

EIS Reference	Environmental Commitments and Management Measures During Construction	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
	▪ a minimum fuel-free zone: - southern perimeter - 22 metres; - northern and western perimeter - 20 metres. ▪ a minimum fuel-reduced zone: - southern perimeter - 15 metres; - northern and western perimeter - 17 metres; ▪ clearing, mulching and hazard reduction prior to construction; ▪ a bush fire emergency response plan for construction workers; ▪ storing flammable materials away from site perimeter; and ▪ building design to prevent entry of ember showers or smoke during a bush fire.	▪ Bush fires are not expected from site construction activities. Clearing for site preparation would reduce bush fire hazard at the site of the proposed replacement reactor. There is a high level of confidence in ANSTO's and emergency services ability to contain and control fires which threaten the Lucas Heights Science and Technology Centre and the construction site of the proposed replacement reactor.	▪ No change from Draft EIS.
Noise (Chapter 17.3 of Draft EIS)			
	Management of construction noise would involve: ▪ minimising period of bulk excavation work; ▪ ensuring no noisy activities occur outside of normal construction hours; ▪ siting noise plant as far as possible from noise sensitive locations; and ▪ selecting quiet running construction plant and equipment wherever possible.	▪ Impacts would be localised to the Lucas Heights Science and Technology Centre and limited to the duration of construction. Management measures are those regularly implemented for construction projects of a similar scale.	▪ No change from Draft EIS.
Visual and Landscape (Chapter 17.4 of Draft EIS)			
	▪ Lighting used during night time construction activities would be appropriately shielded and directed away from site boundaries	▪ There would be little or no discernible change to visual quality (at the site of the proposed replacement reactor) from the majority of views within the viewing catchment.	▪ No change from Draft EIS.
Cultural Heritage (Chapter 17.5 of Draft EIS)			
	▪ Managing the potential archaeological deposit (PAD1) by constructing a bund at the southern edge of earthworks directing water run-off around the deposit	▪ No adverse impact is predicted.	▪ No change from Draft EIS.
Environmental Management and Monitoring (Chapter 18 of Draft EIS)			

EIS Reference	Environmental Commitments and Management Measures During Construction	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
	Undertake the environmental management commitments outlined to mitigate adverse environmental impacts and achieve desired environmental outcomes. Environmental management for construction include: ▪ applying the Health, Safety and Environment Policy, the Occupational Health and Safety Policy and the associated safety directives. These would continue to provide the basis for managing ongoing activities at the Lucas Heights Science and Technology Centre during construction; ▪ preparing an environmental management plan for construction; ▪ undertaking a program of community consultation and reporting, managed by a community liaison manager designated by ANSTO; ▪ appointing an environmental manager, by the vendor, who would be responsible for overseeing successful implementation of the construction environmental management plan; ▪ designating an environmental manager by ANSTO, responsible for monitoring and auditing the implementation of the vendors environmental management plan; ▪ a workplace procedures manual would be developed and implemented by ANSTO as a principal reference for personnel working at the site; and ▪ an induction training program would be implemented for all new personnel.	▪ Environmental Management Plans are routinely required for construction projects and represent the most effective means of implementing a coordinated approach to environmental management during construction.	▪ ANSTO provides timetable for implementation of Environmental Monitoring Programs in *Chapter 18* of this Supplement noting dual (construction and routine) monitoring during the constructions stage.
Decommissioning (Chapter 19 of Draft EIS)			
	▪ Prepare an options study, an overall decommissioning plan and a comprehensive Stage 1 decommissioning plan at least one year before HIFAR is shutdown ▪ Remove irradiated fuel and heavy water coolant and transport overseas for reprocessing/ conditioning for sale/reuse, respectively, as soon as practical after shutdown	▪ Impacts would be localised to either the site of the replacement reactor or the existing HIFAR building. Impacts would occur for a period of not less than 30 years from the shutdown of the HIFAR reactor. Management measures have not yet been specifically defined, but would include a range of tasks regularly carried out by HIFAR staff during normal operation, for example the loading and unloading of fuel and spent fuel.	▪ No change from Draft EIS.
Cumulative Impacts and Ecologically Sustainable Development (Chapter 20 of Draft EIS)			
	The following initiatives would be implemented:		

EIS Reference	Environmental Commitments and Management Measures During Construction	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
	▪ incorporate a requirement by the vendor to demonstrate solutions for the ultimate disposal of spent fuel in the tender specifications; ▪ undertake a life cycle assessment of all building materials to be used in structures constructed as part of the proposal; ▪ avoid the use of non-sustainable materials such as polyvinylchloride and use, wherever practical, alternatives; ▪ use recycled or recycled content products as construction materials wherever practical; ▪ reuse all excavated soil on site for use in landscaping works.	▪ The initiatives would contribute to the achievement of the principles of ecologically sustainable development.	▪ No change from Draft EIS.
Construc-tion	▪ The following initiatives would be implemented: ▪ develop a waste minimisation strategy which adopts a cradle-to-grave approach to construction wastes; ▪ implement a source separation based collection system for recyclable materials; ▪ use recycled or plantation timbers for formwork and scaffolding; ▪ avoid the use fluorocarbons.	The initiatives would contribute to the achievement of the principles of ecologically sustainable development.	No change from Draft EIS.

COMMITMENTS-OPERATIONAL PHASE

EIS Reference	Environmental Commitments and Management Measures During Operation	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
Geology, Soils and Water (Chapter 8 of Draft EIS)			
	Management measures include: ▪ ensuring stormwater management maintains post-development stormwater flows at or below existing flows or up to the 100 years average recurrence interval event; ▪ ensuring no increase in nutrient or sediment loads occur due to the proposal; and ▪ constructing two new stormwater bunds, one for each catchment, to provide for on site containment and treatment of any small accidental spills or releases of contaminated liquid.	▪ Impacts would be localised at the site of the replacement reactor but potential for off-site releases would occur throughout the life of the reactor. Management measures are those which have been in place at the Lucas Heights Science and Technology Centre since 1995. Further investigation of groundwater would be undertaken prior to the commencement of construction to characterise possible additional mitigation measures.	▪ No change to Draft EIS conclusions. Groundwater and surface water monitoring programs to be addressed during the development of environmental monitoring system as provided in *Chapter 18* of this Supplement.
Air Quality (Chapter 9 of Draft EIS)			
	▪ No mitigative measure is required for non-radioactive releases to the atmosphere during operation.	▪ No non-radiological impacts on air quality are predicted during operation.	▪ No change to Draft EIS conclusions.
Management of Reactor Products, Spent Fuel and Wastes (Chapter 10 of Draft EIS)			
Reactor Products	▪ Ensure that all radiopharmaceuticals produced using the replacement reactor are produced in accordance with the same national and international standards that currently apply, and in accordance with any new legislation which may replace these standards in the future; and ▪ ensure all reactor products transported from the Lucas Heights Science and Technology Centre comply with the requirements of national standards and the International Atomic Energy Agency regulations for the safe transport of radioactive materials.	▪ Continued compliance with relevant national and international standards would ensure potential impacts are minimised or avoided.	▪ No change to Draft EIS outcome.

EIS Reference	Environmental Commitments and Management Measures During Operation	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
Spent Fuel	▪ Spent fuel would only be stored at the Lucas Heights Science and Technology Centre for the minimum time required to satisfy operational, and technical, radiation safety and economic constraints; ▪ spent fuel would be stored at the Lucas Heights Science and Technology Centre for not more than nine years before it is transported abroad for reprocessing/conditioning; ▪ arrangements to transport spent fuel from the Lucas Heights Science and Technology Centre would commence as soon as the inventory reached five year arisings; ▪ a requirement would be included in the tender specifications for design and construction of the replacement reactor that bidders demonstrate a solution exists for the ultimate disposition of spent fuel arisings. Shipment by shipment basis contracts for spent fuel shipments and reprocessing/ conditioning would be avoided. Consideration would be given to entering into a contract with an overseas reprocessor covering the lifetime spent fuel arisings of the reactor; ▪ waste from reprocessing/conditioning of spent fuel would be returned to Australia in a form which is suitable for placing in a national storage facility, for long-lived intermediate level waste; ▪ maximum advantage would be taken of waste minimisation opportunities in relation to the waste form resulting from reprocessing/ conditioning while remaining consistent with the International Atomic Energy Agency limits applicable to long-lived intermediate level radioactive waste; and ▪ waste from reprocessing/conditioning of spent fuel returned to Australia would not be stored at the Lucas Heights Science and Technology Centre.	▪ Impacts would be restricted to the duration of the storage of spent fuel at the Lucas Heights Science and Technology Centre. Off-site transport would be undertaken in accordance with national and international conventions and standards. Impacts of disposal (not the subject of this Draft EIS) would be localised to the site of the proposed national waste storage facility.	▪ ANSTO have entered into arrangements with COGEMA in France for the reprocessing of spent fuel from the replacement reactor. Further clarification of National Waste Repository provided in *Chapter 10* of this Supplement.

EIS Reference	Environmental Commitments and Management Measures During Operation	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
Emissions and Rad Waste	▪ Comply with all relevant legislative and regulatory requirements, in particular, ensuring that all discharges are within authorised limits, regular radioactive releases to the environment are monitored and reported; ▪ ensure that radiation exposures would be kept "as low as reasonably achievable", taking into account economic and social factors; ▪ making sure that the maximum off-site dose to a member of the public would remain less than one percent of the public dose limit recommended by the National Health and Medical Research Council of one millisievert;	▪ Impacts would be localised to the area of the buffer zone and limited to one per cent of the public dose limit. Implementation of management measures, including new technologies, are predicted by ANSTO to ensure radiation exposures are kept As Low As Reasonably Achievable.	▪ No change to Draft EIS conclusions; ▪ formation of Australian Radiation Protection and Nuclear Safety Agency in December 1998 will further strengthen regulatory controls; and ▪ since the production of the Draft EIS, the process for solidification of the intermediate-level waste has reached routine operation; ▪ A recent study of the health of local residents using the most up to date information has been included in *Appendix C* of this Supplement and indicated no impact on public health as a result of ANSTO's activities.
	▪ ensure that comprehensive assessments of future emissions would be undertaken and independently reviewed by the regulatory authority (ARPANSA) as part of the approval process before construction; ▪ minimise production and volume of future wastes, taking into account economic and social factors; ▪ implement ANSTO's Waste Management Plan in a way which ensures that best practice is adopted by the year 2000 as defined in the Radioactive Waste Safety Standards and Guidelines which have been developed by the International Atomic Energy Agency; and ▪ transport all low level and short-lived intermediate level radioactive waste to the national waste repository, when it becomes operational, and transport all long-lived intermediate level radioactive waste to the national storage facility when it becomes operational.		
Non-Rad Waste	▪ Ensure that the current system of processing non-radioactive wastes, treatment and disposal continues to be within all regulatory guidelines and generally moves towards the reduction of waste quantities and recycling of materials generated.	▪ No significant increase in the generation of non-radioactive waste is predicted.	▪ No change to Draft EIS conclusions.
Hazards and Risks (Chapter 11 of Draft EIS)			

EIS Reference	Environmental Commitments and Management Measures During Operation	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
	▪ Conduct the design, construction, operation, utilisation, modification and decommissioning of the replacement reactor to the standards as set by international authorities such as the International Atomic Energy Agency and International Commission on Radiological Protection, and would be approved by the Australian nuclear regulatory authority, ARPANSA.	▪ Dose calculation models relating to hazards and risks have adopted conservative assumptions. The model used (PC-CREAM) is widely used to estimate doses in Europe. Outcomes are subject to ANSTO satisfying the regulatory requirements of ARPANSA and the requirements of the International Atomic Energy Agency; and keeping occupational and public radiation doses As Low As Reasonably Achievable.	▪ No change to Draft EIS conclusions; ▪ further work undertaken on collective dose to 50 kilometres did not alter conclusions; ▪ reassessment of release fractions in *Chapter 11* of this Supplement did not alter conclusions; and ▪ a deed of indemnity was signed (refer *Chapter 1* of Supplement) between ANSTO and the Commonwealth Government on 27 August 1998.
	▪ The safety management system applied by ANSTO to the replacement reactor would meet all relevant requirements for nuclear safety, defence-in-depth, and occupational and public radiation protection. ▪ Comply with the forthcoming ARPANSA Act, 1998 and Regulations, as well as all relevant licence conditions, ARPANSA principles and guidelines, including: - ensuring that the safety assessment of the reactor meets the Nuclear Safety Bureau's and the Australian Radiation Protection and Nuclear Safety Agency's criteria; - ensuring the occupational and public radiation doses are less than the relevant dose limits; are "as low as reasonably achievable"; and within authorised dose constraints; and - ensuring that the design and construction of the reactor building enables it to withstand external natural and man-made events, such as the design basis earthquake and the crash of a light aircraft. ▪ Maintain the existing 1.6 kilometre buffer zone. ▪ Ensure that all packages containing radioisotopes, spent fuel or waste, which are transported from the Lucas Heights Science and Technology Centre, would comply with the transport regulations of ARPANSA and the International Atomic Energy Agency.	▪ The environmental management commitments for the design, constructor, operation and utilisation of the replacement reactor would be capable of being achieved.	▪
Flora and Fauna (Chapter 12 of Draft EIS)			
	Specific management measures would include:		

EIS Reference	Environmental Commitments and Management Measures During Operation	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
	▪ Monitoring of erosion and sedimentation control measures; ▪ monitoring of revegetated areas within the fuel-reduced zone to ensure levels of weed invasion are minimised; ▪ reusing mulch produced by bushfire hazard reduction activities in revegetation; ▪ carrying out bushfire hazard reduction activities to ensure protection of native flora and fauna; and ▪ managing the buffer zone toward the protection and long term maintenance of biodiversity and natural ecosystem processes.	▪ There would be no significant impacts on flora and fauna of national, state or regional significance. Impact would be restricted to the area of the buffer zone. Ongoing management measures would be implemented during the life of the reactor and include those regularly implemented in similar circumstances. Predicted outcomes are known based on current practices associated with HIFAR.	▪ No changes to Draft EIS conclusions.
Planning and Land Use (Chapter 13 of Draft EIS)			
	▪ Future land use proposals within the buffer zone would continue to be subject to approval by the ANSTO Board in accordance with the relevant environmental and safety criteria.	▪ No significant changes to planning or land uses within the buffer zone are expected in the future.	▪ No changes to Draft EIS conclusions.
Traffic and Transport (Chapter 14 of Draft EIS)			
	▪ No specific management measures are necessary.	▪ Impacts would be localised to the intersection of New Illawarra Road and the entrance to the Lucas Heights Science and Technology Centre. Significant increases in traffic are not predicted.	▪ No changes to Draft EIS conclusions; and ▪ ANSTO to liaise with relevant NSW and Commonwealth Authorities.
Infrastructure and Services (Chapter 15 of Draft EIS)			
	▪ Minimisation of water and energy use (refer ecologically sustainable development below).	▪ Existing infrastructure and services, with proposed augmentations, would meet the needs of the proposed reactor during operation	▪ No changes to Draft EIS conclusions; and ▪ ANSTO to liaise with Sydney Water on water supply issues.
Social and Economic Impacts (Chapter 16 of Draft EIS)			
	▪ Ensure ongoing monitoring and implementation of environmental management measures during operation. ▪ Release information about the performance of environmental management to the community to assist in overcoming any sense of alienation from operation of the replacement reactor.	▪ Impacts would occur within the local community of interest and could be expected for the life of the reactor.	▪ No changes to Draft EIS conclusions.
Land Contamination (Chapter 17.1 of Draft EIS)			
	Not applicable	Not applicable	
Bushfire (Chapter 17.2 of Draft EIS)			
	Specific measures are:		

EIS Reference	Environmental Commitments and Management Measures During Operation	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
	▪ regularly maintain vegetation and fuel loads within the fuel reduced zone; ▪ regularly mow and water grasses within the fuel-free zone; ▪ maintain existing fire trails in the buffer zone to a high standard; ▪ implement erosion control on the fuel-free zone and access tracks; ▪ select trees and shrubs for ornamental planting to include species not readily combustible; and ▪ prepare the site prior to the bush fire season by undertaking vegetation and building maintenance.	▪ There is a high level of confidence in existing emergency planning and response systems in place to contain and control fires which threaten the Lucas Heights Science and Technology Centre and the proposed replacement research reactor	▪ No changes to Draft EIS conclusions; and ▪ clarification provided on bushfire hazards and management in *Chapter 17* of this Supplement.
Noise (Chapter 17.3 of Draft EIS)			
	▪ No specific management measures are necessary.	▪ Impacts would be localised to the site of the replacement reactor and no noise impacts are predicted beyond the boundary of the Lucas Heights Science and Technology Centre. Impacts would be no greater than those for HIFAR.	▪ No changes to Draft EIS conclusions.
Visual and Landscape (Chapter 17.4 of Draft EIS)			
	▪ Plant ornamental trees around structure, subject to the requirements of bushfire hazard management.	▪ Impacts would be localised to those residents closest to the Lucas Heights Science and Technology Centre, however, no significant change in the visual and landscape quality of the area is predicted.	▪ No changes to Draft EIS conclusions.
Cultural Heritage (Chapter 17.5 of Draft EIS)			
	▪ Not applicable.		
Environmental Management and Monitoring (Chapter 18 of Draft EIS)			

EIS Reference	Environmental Commitments and Management Measures During Operation	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
	▪ Continue the program of environmental and effluent monitoring to ensure that the environmental management commitments and measures identified for operation of the proposed replacement reactor are implemented. Environmental management systems for operation of the proposal include: ▪ expanding the existing environmental and effluent monitoring program to include non-radiological surface water impacts, radiological groundwater exposure pathways and installing airborne effluents discharge monitors for the replacement research reactor.	▪ Environmental management systems developed for HIFAR have been subject to continual improvement during its operational life. These systems would be adapted, within the context of the new licensing arrangements established by ARPANSA, and applied to the operation of the proposed replacement reactor.	▪ Timetable for implementation of environmental monitoring systems provided in *Chapter 18* of this Supplement .
Decommissioning (Chapter 19 of Draft EIS)			
	▪ All hazards and risks associated with decommissioning would be addressed in detail in a Decommissioning Plan.	▪ Impacts would be localised to either the site of the replacement reactor or the existing HIFAR building. Impacts would occur for a period of not less than 30 years from the shutdown of the proposed replacement reactor. Management measures have not yet been specifically defined, but would include a range of tasks regularly carried out by HIFAR staff during normal operation, for example the loading and unloading of fuel and spent fuel.	▪ No changes to Draft EIS conclusions; and ▪ clarifications provided in *Chapter 19* of this Supplement.
Cumulative Impacts and Ecologically Sustainable Development (Chapter 20 of Draft EIS)			
Operation	The following initiatives would be implemented:		
	▪ minimise the production and volume of future waste taking into account economic and social factors; ▪ ensure the maximum off-site dose to a member of the public when the reactor is operating would remain less than one percent of the public dose limit adopted by the National Health and Medical Research Council of one millisievert; ▪ transport spent fuel from the Lucas Heights Science and Technology Centre as soon as practical allowing for the constraints of fuel cooling, radiation safety and economic transport; ▪ manage the buffer zone for the protection and long term maintenance of biodiversity and ecological systems;	▪ The initiatives would contribute to the achievement of the principles of ecologically sustainable development.	▪ No changes to Draft EIS conclusions.

EIS Reference	Environmental Commitments and Management Measures During Operation	Predicted Outcome in Draft EIS	New Commitments/ Predicted Outcome in Final EIS
	▪ investigate the potential reuse of secondary cooling system water; ▪ investigate the possibility of a "green power" purchase agreement with Energy Australia; ▪ install low water usage devices, such as dual flush toilets, low flow taps, trigger action hoses and drip irrigation; and ▪ install energy efficient lighting.		