


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p>Accredited to ISO/IEC 17025:2005</p>	<h3>Amec Foster Wheeler Nuclear UK Limited</h3> <p><b>Issue No: 034    Issue date: 13 October 2016</b></p>	
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<p><b>Testing performed at the above address only</b></p>		

### DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>SEDIMENT, SOIL, CONCRETE, GEOLOGICAL MATERIALS MILK, SEWAGE SLUDGE, PLASTICS, SOFT WASTE, GRAPHITE, AQUEOUS SOLUTIONS, WATER: Natural, process, waste and potable</p>	<p><u>Radiochemical Analysis</u>  Tritium - <math>^3\text{H}</math></p>	<p>Documented In-House Method OM Pyrolysis, tritium analysis by pyrolysis and liquid scintillation</p>
<p>WATER: Natural, process, waste, potable and sea water</p>	<p>Tritium - <math>^3\text{H}</math></p>	<p>Documented In-House Method OM H-3 based on ISO 9698:2010 by liquid scintillation</p>
<p>MILK</p>	<p>Tritium - <math>^3\text{H}</math></p>	<p>Documented In-House Method OM H-3 by distillation and liquid scintillation counting</p>
<p>SEDIMENT, SOIL, CONCRETE, WATER: Natural, process, waste and potable</p>	<p>Gross alpha and beta radioactivity (thick source method) relative to: Alpha - <math>^{239}\text{Pu}</math>, <math>^{241}\text{Am}</math> Beta - <math>^{137}\text{Cs}</math>, <math>^{40}\text{K}</math></p>	<p>Documented In-House Method OM ABTS based on ISO 9696:2007 and ISO 9697:2008, by proportional counting or ZnS and Geiger Muller</p>
<p>FREEZE-DRIED SEAWEED, CRUSTACEA, MOLLUSCS AND FISH</p>	<p>Gross beta radioactivity (thick source method) relative to: <math>^{40}\text{K}</math></p>	<p>Documented In-House Method OM ABTS based on ISO 9697:2008 by gas-flow proportional counting</p>



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	<u>Radiochemical Analysis (cont'd)</u>	
NUCLEAR POWER STATION EFFLUENT	Gross beta radioactivity relative to <sup>137</sup> Cs, <sup>3</sup> H/ <sup>137</sup> Cs, <sup>35</sup> S/ <sup>137</sup> Cs and <sup>55</sup> Fe/ <sup>35</sup> S	Documented In-House Method OM GBLSC by liquid scintillation counting
ACIDIC AQUEOUS BUBBLER SOLUTIONS	Gross beta radioactivity relative to Tritium <sup>3</sup> H and Sulfur - <sup>35</sup> S	Documented In-House method OM GBBUB by liquid scintillation counting
ALKALINE AQUEOUS BUBBLER SOLUTIONS	Gross Beta radioactivity relative to Carbon - <sup>14</sup> C	Documented In-House method OM GBBUB by liquid scintillation counting
NUCLEAR POWER STATION EFFLUENT MILK, GRASS/HERBAGE	Sulfur – <sup>35</sup> S	Documented In-House method OM S-35 by liquid scintillation counting
SWABS, SEDIMENT, SOIL, CONCRETE, BUILDING MATERIALS, GEOLOGICAL MATERIALS, WATER: Natural, process, waste and potable	Strontium - <sup>90</sup> Sr	Documented In-House Method OM Sr-90 by liquid scintillation and ICP-MS (partial and full ingrowth)
LARGE SEDIMENT & SOIL SAMPLES (up to 28 g) MILK, FISH (FREEZE-DRIED) & MOSS (FREEZE-DRIED)	Strontium - <sup>90</sup> Sr	Documented In-House method OM Sr-90 and OM Sample Preparation by liquid scintillation counting and ICP-MS (partial and full ingrowth)
SEDIMENT, SOIL, CONCRETE, GEOLOGICAL MATERIALS, STEEL, SWABS, WATER: Natural, process, waste and potable	Iron - <sup>55</sup> Fe	Documented In-House Method OM Fe-55 by liquid scintillation
SOIL, CONCRETE, STEEL, SWABS, WATER: Natural, process, waste and potable	Nickel - <sup>63</sup> Ni	Documented In-House Methods OM Ni-63 & OM ICPMS Ni63 by liquid scintillation and ICP-MS
CONCRETE, PAPER SWABS, SODIUM CARBONATE SOLUTION, AQUEOUS SOLUTIONS, MILK, WATER: Natural, process, waste and potable	Carbon - <sup>14</sup> C	Documented In-House Method OM Pyrolysis by liquid scintillation counting of Beta radioactivity



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FISH (FREEZE-DRIED), GRASS and HERBAGE	<u>Radiochemical Analysis</u> (cont'd) Carbon - <sup>14</sup> C	Documented In House Method OM Pyrolysis by Pyrolysis and Liquid Scintillation
SOIL	Carbon - <sup>14</sup> C	Documented In House Method OM Pyrolysis by Pyrolysis and Liquid Scintillation
SEDIMENT, SOIL, CONCRETE, GEOLOGICAL MATERIALS, SEAFOOD, WATER: Natural, process, waste and potable	Technetium - <sup>99</sup> Tc	Documented In-House Methods OM Tc-99 Solid, OM Tc-99 Water, OM ICPMS Tc99 by ICP-MS
SEDIMENT, SOIL, CONCRETE, GEOLOGICAL MATERIALS, WATER: Natural, process, waste and potable	<u>Determination of alpha emitting radionuclides</u> Natural Uranium isotopes <sup>238</sup> U, <sup>235</sup> U, <sup>234</sup> U	Documented In-House Method OM UNAT and OM AS by alpha spectrometry
SEDIMENT, SOIL, CONCRETE, GEOLOGICAL MATERIALS, WATER: Natural, process, waste and potable	Recycled Uranium isotopes <sup>238</sup> U, <sup>236</sup> U, <sup>235</sup> U, <sup>234</sup> U, <sup>233</sup> U, <sup>232</sup> U	Documented In-House Method OM URECYC, OM AS and OM ICPMS-URECYC by alpha spectrometry and ICP-MS
SWABS, SEDIMENT, SOIL, CONCRETE, GEOLOGICAL MATERIALS, WATER: Natural, process, waste and potable	<u>Non-Uranic Actinides</u> Americium - <sup>241</sup> Am Curium - <sup>242</sup> Cm, <sup>243+244</sup> Cm Plutonium - <sup>239+240</sup> Pu, <sup>238</sup> Pu, <sup>241</sup> Pu, <sup>242</sup> Pu Thorium - <sup>232</sup> Th, <sup>230</sup> Th, <sup>228</sup> Th	Documented In-House Method OM ACT and OM AS by alpha spectrometry and liquid scintillation
FISH (FREEZE-DRIED) AND MILK	Americium - <sup>241</sup> Am	Documented In-House Methods OM ACT and OM AS by alpha spectrometry
FISH (FREEZE-DRIED) AND MILK	Plutonium - <sup>239+240</sup> Pu, <sup>238</sup> Pu, <sup>242</sup> Pu	Documented In-House Methods OM ACT and OM AS by alpha spectrometry



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ENVIRONMENTAL SAMPLES (Water, aqueous solutions, leachates, biota, air filters, soils, sediment and geological materials)	<u>Gamma Emitting Nuclides</u> Gamma Spectrometry (Energy Range: 60 keV to 2 MeV)	Documented In-House Methods OM GSSP, OM GSSOP and OM GS
FOODSTUFFS	Gamma Spectrometry (Energy Range: 60 keV to 2 MeV)	Documented In-House Methods OM GSSP, OM GSSOP and OM GS
NON-ENVIRONMENTAL SOLIDS AND LIQUIDS	Gamma Spectrometry (Energy Range: 60 keV to 2 MeV) (up to density: 2.5 g cm <sup>-3</sup> )	Documented In-House Methods OM GSSP, OM GSSOP and OM GS
END		