ASN Resolution 2021-DC-0706 of 23 February 2021 setting prescriptions for Électricité de France (EDF) applicable to the reactors of the NPPs of Blayais (BNIs 86 and 110), Bugey (BNIs 78 and 89), Chinon (BNIs 107 and 132), Cruas (BNIs 111 and 112), Dampierre-en-Burly (BNIs 84 and 85), Gravelines (BNIs 96, 97 and 122), Saint-Laurent-des-Eaux (BNI 100) and Tricastin (BNIs 87 and 88) in the light of the conclusions of the generic phase of their fourth periodic safety review

ASN (Autorité de sûreté nucléaire), the French nuclear safety authority,

Having regard to European Parliament and Council regulation 1907/2006 of 18 December 2006 concerning the registration, evaluation and authorisation of chemical substances, as well as the restrictions applicable to these substances (REACH);

Having regard to European Parliament and Council regulation 1272/2008 of 16 December 2008 concerning the classification, labelling and packaging of substances and mixtures;

Having regard to European Parliament and Council regulation 528/2012 of 22 May 2012 concerning the marketing and utilisation of biocidal products;

Having regard to the Environment Code, in particular its articles L. 592-21, L. 593-18 and L. 593-19;

Having regard to the Decree of 20 November 1972 authorising the creation by Électricité de France of the Bugey NPP (units 2 and 3) in the Ain département;

Having regard to Decree 76-771 of 27 July 1976 authorising the creation by Électricité de France of the fourth and fifth units of the Bugey NPP, in the Ain département;

Having regard to the Decree of 14 June 1976 authorising the creation by Électricité de France of two units in the Le Blayais NPP in the Gironde département;

Having regard to the Decree of 14 June 1976 authorising the creation by Électricité de France of four units in the Dampierre-en-Burly NPP in the Loiret département;

Having regard to Decree 76-594 of 2 July 1976, amended, authorising the creation by Électricité de France of four units in the Tricastin NPP in the Drôme département;

Having regard to Decree 77-1190 of 24 October 1977, amended, authorising the creation by Électricité de France of four units in the Gravelines NPP in the Nord département;

Having regard to the Decree of 8 March 1978 authorising the creation by Électricité de France of two units in the Saint-Laurent-des-Eaux NPP in the Loire-et-Cher département;

Having regard to the Decree of 4 December 1979 authorising the creation by Électricité de France of two units in the Chinon NPP in the Indre-et-Loire département;

Having regard to the Decree of 5 June 1980 authorising the creation by Électricité de France of two units in the Le Blayais NPP in the Gironde département;

Having regard to the Decree of 8 December 1980 authorising the creation by Électricité de France of four units in the Cruas NPP in the Ardèche département;

Having regard to the Decree of 18 December 1981, amended, authorising the creation by Électricité de France of two units in the Gravelines NPP in the Nord département;

Having regard to the Decree of 7 October 1982 authorising the creation by Électricité de France of units B3 and B4 in the Chinon NPP in the Indre-et-Loire département and modifying the perimeter of the BNI consisting of units B1 and B2 of this plant;

Having regard to the Order of 7 February 2012, amended, setting out the general rules relative to basic nuclear installations;

Having regard to ASN Resolutions 2012-DC-0276, 2012-DC-0275, 2012-DC-0278, 2012-DC-0281, 2012-DC-0282, 2012-DC-0286, 2012-DC-0291 and 2012-DC-0292 of 26 June 2012, setting additional binding requirements on Électricité de France – Société Anonyme (EDF-SA) applicable to the NPP of Bugey (Ain), Blayais (Gironde), Chinon (Indre-et-Loire), Cruas (Ardèche), Dampierre (Loiret), Gravelines (Nord), Saint-Laurent (Loir-et-Cher) and Tricastin (Drôme) respectively, in the light of the conclusions of the stress tests (ECS) on BNIs 78, 89, 86, 110, 107, 132, 111, 112, 84, 85, 96, 97, 122, 100, 87 and 88;

Having regard to ASN Resolution 2013-DC-0360 of 16 July 2013, amended, relative to control of detrimental effects and the impact of basic nuclear installations on health and the environment;

Having regard to ASN resolutions 2014-DC-0396, 2014-DC-0395, 2014-DC-0398, 2014-DC-401, 2014-DC-402, 2014-DC-406, 2014-DC-411 and 2014-DC-412 of 21 January 2014 setting additional binding requirements on Électricité de France – Société Anonyme (EDF-SA) applicable to the NPPs of Bugey (Ain), Blayais (Gironde), Chinon (Indre-et-Loire), Cruas (Ardèche), Dampierre (Loiret), Gravelines (Nord), Saint-Laurent (Loir-et-Cher) and Tricastin (Drôme) respectively, in the light of the examination of the file submitted by the licensee in compliance with the requirement (ECS-1) of the above-mentioned resolutions of 26 June 2012;

Having regard to ASN Resolution 2014-DC-0444 of 15 July 2014 relative to Pressurised Water Reactor Shutdown and Restart Operations;

Having regard to ASN resolution 2015-DC-0508 of 21 April 2015 concerning the study of waste management and the inventory of waste produced in the BNIs;

Having regard to ASN Resolution 2016-DC-0578 of 6 December 2016 on the prevention of risks resulting from the dispersal of pathogenic micro-organisms (legionella and amoeba) by PWR secondary system cooling installations;

Having regard to ASN Resolution 2017-DC-0587 of 23 March 2017, relative to the packaging of radioactive waste and the conditions for acceptance of the radioactive waste packages in the disposal BNIs;

Having regard to ASN resolution 2017-DC-0588 of 6 April 2017 relative to the conditions for water intake and consumption, discharge of effluents and monitoring of the environment around PWR reactors;

Having regard to the EDF guidance file for the fourth periodic safety review of the 900 MWe reactors, reference EMESN130349 rev. C of 24 January 2014;

Having regard to the EDF note summarising its response to the objectives of the fourth periodic safety review of the 900 MWe reactors, reference D455617307787 rev. B1 of 5 September 2018;

Having regard to the undertakings made by EDF during examination of the generic phase of the fourth periodic safety review of the 900 MWe reactors;

Having regard to the ASN letter reference CODEP-DCN-2016-007286 of 20 April 2016 concerning the generic guidelines for the fourth periodic safety review of the EDF 900 MWe reactors;

Having regard to the examination by the Nuclear Safety Authority (ASN);

Having regard to the results of the consultation conducted by the High Committee for Transparency and Information on Nuclear Safety from 6 September 2018 to 31 March 2019 on improving the safety of the EDF 900 MWe reactors within the context of their fourth periodic safety review;

Having regard to EDF's observations of 8 January 2021;

Having regard to the results of the public consultation held on the ASN website from 3 December 2020 to 22 January 2021;

Whereas the objectives of the fourth periodic safety review of the EDF 900 MWe reactors specified in its abovementioned file of 24 January 2014 and the ASN letter of 20 April 2016;

Whereas the studies performed by EDF during the generic phase of this review and the provisions it intends to implement for each of the reactors concerned;

Whereas the undertakings made by EDF during the examination; whereas these undertakings contribute to attaining the objectives set for this periodic safety review;

Whereas the conclusions of the ASN examination contained in the above-mentioned report;

Whereas this examination revealed the need to prescribe certain provisions required in order to attain the objectives set for this periodic safety review, along with their deadlines;

Whereas the schedule proposed by EDF for deployment of all the provisions on the installations; given the nature and scale of the corresponding operations, this schedule intends to implement these provisions either by submission of the periodic safety review concluding report, or five years after this date, as well as specific deadlines for the first reactors carrying out their fourth periodic safety review;

Whereas the schedule for deployment of the provisions on the installations shall take account of their importance for safety and the ability of the industrial fabric to carry them out with the required standard of quality, as well as the associated training necessary for the operators to familiarise themselves with these changes; whereas most of the safety improvements shall be made during the ten yearly outage,

Hereby issues the following resolution:

Article 1

This resolution applies to the reactors of the NPPs of Bugey (BNIs 78 and 89), Blayais (BNIs 86 and 110), Chinon (BNIs 107 and 132), Cruas (BNIs 111 and 112), Dampierre-en-Burly (BNIs 84 and 85), Gravelines (BNIs 96, 97 and 122), Saint-Laurent-des-Eaux (BNI 100) and Tricastin (BNIs 87 and 88).

Appendix 1 sets the requirements binding upon EDF, hereinafter referred to as "the licensee", for continued operation of its 900 MWe reactors, in the light of the conclusions of the generic phase of their fourth periodic safety review.

Appendix 2 sets the deadlines specific to each reactor.

Article 2

This resolution is issued without prejudice to:

- the provisions applicable in the event of a threat to the interests mentioned in Article L. 593-1 of the Environment Code and the requirements that ASN could issue pursuant to Articles R. 593-38 and R. 593-40 of this same Code;
- the requirements that ASN could issue, following analysis of the periodic safety review concluding reportfor each of the reactors, pursuant to Article L. 593-19 of the Environment Code.

Article 3

Until full completion of the actions ensuring compliance with the requirements in the appendix to this resolution, the licensee shall, no later than the 30th of June of each year, present those implemented during the course of the previous year, as well as those still to be performed, along with their schedule.

It shall present the lessons it has learned from implementation on the sites of the provisions resulting from the periodic safety review. It shall indicate its industrial capacity and that of the outside contractors for on-schedule performance of the actions mentioned in the first paragraph. If there is a risk of failing to meet the deadlines, it shall specify the additional measures it implements to remedy the inadequacies identified.

The licensee shall make public the elements mentioned in the previous two paragraphs.

Article 4

This resolution may be referred to the Council of State by the licensee, within a period of two months from its date of notification.

Article 5

The ASN Director-General is tasked with the enforcement of this resolution, which shall be notified to the licensee and published in the ASN Official Bulletin.

Done in Montrouge, 23 February 2021.

The ASN Commission,

Signed by:

Bernard DOROSZCZUK

Sylvie CADET-MERCIER Lydie EVRARD Jean-Luc LACHAUME Géraldine PINA

Appendix 1
to ASN resolution 2021-DC-0706 of 23 February 2021
setting prescriptions on the Électricité de France (EDF) company applicable to the reactors of the NPPs of Blayais (BNIs 86 and 110), Bugey (BNIs 78 and 89), Chinon (BNIs 107 and 132), Cruas (BNIs 111 and 112), Dampierre-en-Burly (BNIs 84 and 85), Gravelines (BNIs 96, 97 and 122), Saint-Laurent-des-Eaux (BNI 100) and Tricastin (BNIs 87 and 88) in the light of the conclusions of the generic phase of their fourth periodic safety review

For implementation of the appendix to this resolution:

- the "periodic safety review concluding report" is defined as being the report set out in the first paragraph of Article L. 593-19 of the Environment Code for the fourth periodic safety review of a nuclear reactor;
- the definitions of Article 1.3 of the above-mentioned Order of 7 February 2012 are used;
- the terms "hardened safety core" and "hardened safety core situations" are used as defined in the above-mentioned resolutions of 21 January 2014;
- "CPY type reactors" are defined as being the reactors of the NPPs of Blayais, Chinon, Cruas, Dampierre-en-Burly, Gravelines, Saint-Laurent-des-Eaux and Tricastin.

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Current state of knowledge

[GEN] Before the submission of the periodic safety review concluding report, the licensee shall check that the current state of knowledge on which the generic phase of the periodic safety review is based remains pertinent in the light of changing knowledge and of operating experience feedback. If it does not, the licensee shall in this report present the measures it is taking or intends to take to incorporate these changes.

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Conformity of facilities and management of ageing

Correction of the detected deviations

[CONF-A] Without prejudice to the provisions of section 6 of Title II of the above-mentioned Order of 7 February 2012, the licensee shall correct the deviations with an impact on safety that were identified, no later than at the time of the ten-yearly outage preceding the submission of the periodic safety review concluding report,. In the event of any particular difficulty, the licensee shall substantiate postponement of correction of these deviations beyond the ten-yearly outage, along with the corresponding schedule, in the file accompanying the approval request mentioned in Article 2.4.1 of the Appendix to the above-mentioned Resolution of 15 July 2014.

For deviations detected during this ten-yearly outage and which could not be corrected during this outage, the licensee shall present the schedule for their correction in the file mentioned in the first paragraph.

Particular tests

[CONF-B] I.– In order to ensure that the conformity of its reactors with the applicable safety requirements is maintained, to check performance of the safety functions and identify any drifts, the licensee shall supplement its programme of particular tests with the following additional tests, no later than 31 December 2021:

1. tests to check the operation of the steam generator auxiliary feedwater system (ASG) in specific accident situation:
   - the ability of this system's turbine-driven pump to function with a low level in the supply tank, to ensure that, in these conditions, there are no phenomena liable to compromise the water supply to the steam generators. The test programme includes a test on at least one reactor of the Bugey NPP and one CPY type reactor,
   - the ability of this system's turbine-driven pump to function without interruption and for a prolonged period of time without ventilation of its room in a total loss of electrical power situation. The test programme includes a test on at least one reactor of the Bugey NPP and one CPY type reactor;
2. tests to check the ability of the emergency generating sets (LHG and LHH systems for the Bugey NPP and LHQ for the CPY type reactors) to function for a prolonged period of at least forty-eight hours. The test programme includes an *in situ* test on at least one reactor of each NPP with 900 MWe reactors;
3. tests to check the effectiveness of the measures taken after a loss of ventilation system train A for the premises housing electrical equipment (DVL) designed to ensure that the electrical equipment functions; the test programme includes a test on at least one CPY type reactor, after deployment of the modifications to be carried out during the ten-yearly outage preceding submission of the periodic safety review concluding report;
4. tests to check the hydraulic characteristics of the pumps of the water spray system in the containment (EAS) in conditions as close as possible to their operation in an accident situation; the test programme includes a test on at least one reactor of the Bugey NPP and one CPY type reactor.

For its entire particular test programme, it shall therefore justify the choice of reactors and, if applicable, of equipment, on which the tests are to be run, along with the corresponding schedule with regard to the objectives of these tests and their performance conditions.

II.– For each of the tests in its particular tests programme to be performed on CPY type reactors, the licensee shall perform at least one test before 31 December 2024.

For each of the tests in its particular tests programme to be performed on reactors of the Bugey NPP, the licensee shall perform at least one test before 31 December 2025.

Reliability of the recirculation function for the water present at the bottom of the reactor building during a loss of coolant accident

[CONF-C] I.– No later than 31 December 2023 for ten reactors and 31 December 2025 for the others, the licensee shall implement safety strapping on the heat insulation of the pipes connecting the safety injection tanks to the main system, as well as on the pressuriser expansion line.

II.– The licensee:

1. shall, on the primary piping and the steam generator channel heads, take the necessary measurements to allow replacement of the fibrous heat insulation, which is liable to release fibres in the event of a break at the base of the steam generator;
2. shall replace this fibrous heat insulation. It shall check that the temperature conditions remain compatible with the operation of the equipment needed for the safety of the installation in normal, incident or accident situations and shall implement any necessary modifications.

III.– The licensee:

- shall, no later than 31 December 2023, conduct the investigations necessary to identify the lines containing "Microtherm" type micro-porous heat insulation in the reactor building and the auxiliary lines of the reactor building equipped with "Protect 1000S" type fibrous heat insulation, with a diameter greater than 50 mm;
- shall, no later than 31 December 2025, complete replacement of the "Microtherm" type micro-porous heat insulation in the reactor building. Within the same time-frame it shall replace the "Protect 1000S" type fibrous heat insulation on all the reactor building auxiliary lines with a diameter greater than 50 mm. It shall check that the temperature conditions remain compatible with the operation of the equipment needed for the safety of the installation in normal, incident or accident situations and shall implement any necessary modifications.

IV.– No later than 31 December 2021, the licensee shall check that the low-pressure pumps on the safety injection system (RIS) for the reactors of the Bugey NPP are qualified to function in recirculation, in the light of their cavitation risk. It shall if necessary define any modifications to be implemented and the corresponding schedule.

No later than 31 December 2022, the licensee shall by means of tests on a representative pump, check the ability of the pumps of the containment spray system (EAS) on the reactors of the Bugey NPP to carry out their functions in the cavitation situations liable to arise.

The tests carried out on the pumps of the safety injection system and the containment spray system include configurations able to evaluate the ability of these pumps to perform their function with and without calculation of the pressure in the containment as a result of a loss of coolant accident.

V.– No later than 31 December 2024, the licensee shall update its demonstration of the reliability of the recirculation function for the water present at the bottom of the reactor building after a loss of coolant accident. This update includes the lessons learned from the filtration tests performed in conditions representative of the installations and of the accident situation.

Required power margin for the emergency generating sets

[CONF-D] The licensee shall guarantee the supply of all the equipment backed up by each emergency generating set in all the situations of the safety case, with a high level of confidence. In this respect, the power balance of each emergency generating set shall offer a margin of at least 5%. The licensee shall implement any modifications necessary.

Containment leak monitoring device

[CONF-E] The licensee shall determine the defined requirements for the containment leak rate in-service monitoring system (SEXTEN), which is an important factor in protection and plays a role in monitoring the absence of leakage when the air masses within the containment are stable.

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Risks associated with hazards

Hazards associated with external temperatures

[AGR-A] In its "extreme heat" baseline requirements, the licensee includes extreme temperatures T_E and T_{min} associated with the heatwave, defined on the basis of:

- an annual overshoot frequency less than or equal to 10^{-2} (upper bound of the 70% confidence interval) incorporating climate change, up to the following periodic safety review. This climate change takes account of climate trends corresponding to a region of relevance for the site concerned;
- the envelope values from relevant operating experience feedback for the site.

Ability to deal with a total loss of electrical power situation on the site in a high temperature situation

[AGR-B] I.– No later than 31 December 2023, the licensee shall justify the availability of the equipment needed to manage total loss of electrical power situations (off-site electrical power supplies and main emergency generating sets) affecting a reactor and those affecting all the reactors on a site for the "long duration" external temperature (TLD) in its "extreme heat" baseline requirements.

II.– The licensee shall implement any modifications necessary.

Ability to deal with a high temperature situation beyond design-basis

[AGR-C] No later than 31 December 2022, the licensee shall:

- define a hazard going beyond the temperatures adopted in its "extreme heat" baseline requirements, corresponding to a ten thousand year return period and shall substantiate it with regard to the uncertainties related to its evaluation;
- check the availability of the equipment needed to deal with this situation, including in the event of loss of off-site electrical power;
- identify any changes which would enable this objective to be reached.

Risks relating to fire

[AGR-D] I.– No later than 31 December 2022, the licensee shall take account of the following in its fire risk control studies (justification of sectorisation, effect of smoke, effects of pressure):

- all premises on the nuclear island and the pumping station;
- the envelope modelling hypotheses used to determine the temperature curves reached in the rooms for the electrical cabinet fires and electrical cable way fires liable to be encountered. More particularly, for the electrical cabinet fires, it shall adopt a fire spread coefficient that is independent of the ignition conditions and representative of attainment of a self-sustaining combustion phase.

II.– The licensee shall implement any modifications necessary.

[AGR-E] I.– The licensee shall define and implement appropriate operating provisions, which incorporate measures to manage the fire loads and to manage the work which could cause an outbreak of fire, in the following premises:

- premises for which a fire contributes significantly to the risk of core melt or uncovering of fuel assemblies in the spent fuel pool;

– premises in which sectorisation is carried out by at least one door which, if open during a fire, would lead to a significant increase in the risk of core melt or the loss of redundant water make-up means or means of cooling the spent fuel cooling pool.

II.- Independently of their reliability, the licensee shall identify the measures for protection against fire, the failure of which would lead to a significant increase in the risk of core melt or the loss of redundant water make-up means or means of cooling the spent fuel pool.

It shall implement means capable of reducing the risk of failure of these measures and shall define the operational requirements associated with these means.

III.– The licensee shall identify the premises most sensitive to the unavailability of the fixed spray systems. It shall define and implement provisions to limit the risks of loss of fire sectorisation in these premises.

Seismic risks

[AGR-F] I.– The licensee shall identify the systems, structures and components requiring reinforcement in order to ensure that the *hardened safety core* is able to withstand the seismic hazard it defined pursuant to requirement [ECS-ND7] in the appendix to the above-mentioned resolutions of 21 January 2014.

II.– The licensee shall implement the modifications to ensure the reinforcements to the systems, structures and components identified in I.

III.– For the reactors of the NPPs of Blayais, Bugey, Chinon, Cruas and Tricastin, the licensee shall study the reinforcement possibilities in order to deal with higher seismic hazard levels than those mentioned in I, in order to take account of uncertainties on the definition of the extreme hazard and the possible particular site effects. It shall define any modifications to be implemented in the light of the safety issues and the corresponding schedule.

Internal explosion risks

[AGR-G] I.– No later than 31 December 2025, the licensee shall:

– for explosions liable to lead to the loss of a safety function, identify the situations in which the availability of the equipment needed to reach and maintain a safe reactor state is not guaranteed;

– provide a quantified evaluation of the risks of the formation of an explosive atmosphere in the reactor building, including in the event of an earthquake, studying the phenomena liable to occur in the vicinity of the leaks considered;

– define any measures to be implemented in the light of the safety issues and the corresponding schedule.

II..– No later than 31 December 2022, the licensee shall:

– independently of their reliability, identify the measures for protection against explosion, the failure of which would lead to a significant increase in the risk of core melt or the loss of redundant water make-up means or means of cooling the spent fuel pool;

– define the means to be implemented to mitigate the risk of failure of these measures, the operational requirements associated with these means and the corresponding schedule.

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Studies of accidents affecting the reactor

Dilution transients for the reactors of the Bugey NPP

[Etude-A] No later than 31 December 2021, for the reactors of the Bugey NPP, the licensee shall evaluate the time needed for the operator to carry out the first intervention to halt dilution during the following transients:

- dilution by exchanger tube rupture on the reactor coolant pumps seal system (CEPP) in the maintenance outage (API) and refuelling outage (APR) states;
- dilution by tube rupture of the letdown heat exchanger (ENR) for the normal outage state "AN/RRA" with the reactor coolant pumps stopped.

If this time were to exceed the conventional time used in the studies, the licensee shall specify the new time to be considered. It shall check that the safety criteria are met, taking account of this new time and the other design basis study rules. Failing which, and no later than 31 December 2022, the licensee shall define any changes to be implemented in the light of the safety issues and the corresponding schedule.

Validity of the departure from nucleate boiling correlation in the presence of laterally deformed fuel assemblies

[Etude-B] No later than 31 December 2023, the licensee shall use an experimental approach to evaluate the validity of the departure from nucleate boiling correlation used around the periphery of deformed assemblies. By the same date, it shall define any changes to be implemented and the corresponding schedule.

No later than 30 June 2021, the licensee shall transmit a detailed programme of the test configurations to be produced.

Sub-criticality in a total loss of electrical power situation owing to a common-cause failure of the LH electrical switchboards for the reactors of the Bugey NPP

[Etude-C] I.– No later than 31 December 2022, the licensee shall define the modifications needed to avoid return to criticality in a total loss of electrical power situation owing to a common-cause failure of the LH electrical switchboards for the reactors of the Bugey NPP.

II.– The licensee shall implement the modifications mentioned in I.

Mechanical behaviour of fuel assemblies

[Etude-D] I.– No later than 30 June 2023, the licensee shall carry out tests to characterise the buckling limit of the fuel assembly grids.

By the same date, the licensee shall evaluate the mechanical behaviour of the fuel assemblies in a category four loss of coolant accident combined with an earthquake at the same time, on the basis of a validated method, incorporating hypotheses and rules appropriate to the uncertainties and limits of the knowledge of the phenomena involved.

II.– If the value guaranteeing the absence of buckling is exceeded, the licensee shall define the provisions to be implemented to ensure that the reactivity is controlled and the core is cooled in this situation, along with the corresponding schedule.

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Studies of accidents affecting the spent fuel pool

Spent fuel pool diversified make-up and cooling system

[PISC-A] I.– The licensee shall implement a diversified cooling system for the spent fuel pool and an ultimate water make-up system for this pool and shall ensure that it is monitored during operation.

II.– The fixed parts of the provisions mentioned in I are elements important for the protection of the interests for which the licensee shall identify the corresponding defined requirements.

III.– In *hardened safety core situations,* the means used to guarantee the diversified cooling functions for the spent fuel pool and the ultimate water make-up for this pool are part of the *hardened safety core* and comply with requirements [ECS-16] of the Appendix to the above-mentioned resolutions of 26 June 2012 and [ECS-ND2] of the Appendix to the above-mentioned resolutions of 21 January 2014.

Studies of accidents affecting the spent fuel pool

[PISC-B] I.– In a specific chapter of the safety analysis report, the licensee shall include the study rules associated with the safety case of the spent fuel pool, along with the incident and accident situations considered.

This chapter shall include the following situations:

- situations involving partial or total loss of cooling of the spent fuel pool water;
- line rupture situations on a section connected to the spent fuel pool that can be isolated.

It shall implement any modifications necessary.

II.– Before 30 June 2021, the licensee shall define a schedule for performance of the studies of the following situations, using the rules mentioned in I:

- loss of cooling or emptying of the pool in the reactor building when the two pools communicate via the transfer tube, including when a fuel assembly is in the transfer tube;
- situations affecting the reactor building pool, which could – in the event of an earthquake - result from the failure of an equipment item not seismic classified.

Following these studies, it shall define any changes to be implemented in the light of the safety issues and the corresponding schedule.

[PISC-C] The licensee shall check that, in the event of a hazard, incident or accident situation, a safe state characterised by an absence of boiling of the spent fuel pool can be reached and maintained.

It shall identify the situations for which such a state cannot be reached with the means identified in the safety case. It shall define and implement the measures needed to improve the prevention of these situations and shall make provision for post-accident management to achieve this safe state without boiling.

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Studies of accidents with core melt

Corium stabilisation device

[AG-A] I.– The licensee shall implement the technical means of maintaining the dryness of the reactor pit and the corium spreading area at the bottom of the vessel pit and the adjacent room and of passive flooding of the corium with water, as set out in the response to requirement [ECS-ND16] of the Appendix to the above-mentioned resolutions of 21 January 2014, aiming to prevent basemat melt-through in the event of partial or total core melt.

II.– The licensee:

1. shall, no later than 31 December 2022, send ASN a detailed design study for increasing the thickness of the basemat of the reactor buildings with high silica content concrete, starting in 2025. This design study shall comprise a radiation protection optimisation study for the workers involved;
2. shall, no later than 30 June 2023, send ASN the conclusions of its programme to study the behaviour of the basemats in an accident situation with core melt, based on testing. By the same date, it shall issue a position statement on the need to increase the thickness of the basemat in reactor buildings with very high silica content concrete;
3. shall increase the thickness of the basemats which so require.

III.– The licensee shall strengthen the walls between the core internal instrumentation room and the sumps at the bottom of the reactor building containment in order to prevent any risk resulting from corium melt-through.

Removal of residual heat outside the containment without venting

[AG-B] I.– The licensee shall implement the ultimate system for containment residual heat removal (EASu) and shall install the ultimate heatsink (SFu), specified in response to the third paragraph of III of requirement [ECS-ND1] of the Appendix to the above-mentioned resolutions of 21 January 2014, allowing the removal of residual heat outside the containment without opening the venting-filtration device.

II.– The licensee:

1. shall, no later than 31 December 2022, define the means for short-term injection into the reactor building of a volume of borated water in addition to that contained in the spent fuel pit cooling and treatment system tank (PTR) in order to ensure removal of the residual heat from the containment in the event of an accident with fuel melt. By the same time, it shall demonstrate the feasibility of injecting this additional volume of borated water, given the requirements associated with the means adopted and the available borated water capacities;
2. shall implement any modifications necessary.

III.– The licensee shall implement the means needed to deal with the eventual loss of the containment ultimate residual heat removal device (EASu), in a post-accident situation.

IV.– The licensee shall install the means needed to ensure the detection, collection and reinjection into the reactor building of any leaks from the containment ultimate residual heat removal device (EASu), including in a severe accident situation.

[AG-C] I.– The licensee shall provide protection against hazards of internal origin for the components of the containment pressure "wide range" measurement chain located in the main electrical rooms of safety train B.

II.– The licensee shall reinforce the containment venting-filtration device so that it remains operational after a safe shutdown earthquake (SSE).

Management of contaminated water

[AG-D] I.– In order to reduce the risk of contaminating groundwater after an accident which led to core melt, the licensee shall implement the means of mitigating containment water leaks outside the reactor building and the fuel building.

II.– The licensee shall have the necessary means of reducing the contamination of the water present in the reactor building after an accident which led to core melt and shall ensure that they are operational on the site.

III.– In order to mitigate the scale and duration of water contamination in the environment in the event of a contaminated water leak outside the buildings after an accident which led to core melt, the licensee shall study the means of limiting the dissemination of radioactive substances in the soil and groundwater outside the site.

It shall define any measures to be implemented in the light of the safety issues and the corresponding schedule.

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Hardened safety core

Emergency water supply to the hardened safety core's steam generators

[ND-A] The licensee shall implement the modification to the steam generators emergency water supply, specified in the response to the second paragraph of III of requirement [ECS-ND1] of the Appendix to the above-mentioned resolutions of 21 January 2014, allowing the removal of residual heat through the secondary system in *hardened safety core situations.*

Emergency system for injection at reactor coolant pump (RCP) seals

[ND-B] The licensee shall implement an emergency system for injection at the reactor coolant pump seals so that borated water can be injected when the primary system is at high pressure in *hardened safety core situations*.

This system is part of the *hardened safety core.*

Deployment of the hardened safety core

[ND-C] Without prejudice to the provisions of this resolution and the above-mentioned resolutions of 21 January 2014, the licensee shall implement all the other provisions of the *hardened safety core.*

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Study of the radiological consequences of accidents

Mitigation of radiological consequences of a category four steam generator tube rupture accident

[CR-A] I.– No later than 30 June 2022, the licensee shall lower the equivalent iodine limit authorised in power transients by the radiochemical specifications of the primary system coolant.

II.– The licensee shall implement the modifications it intends to make to mitigate the radiological consequences of a category four steam generator tube rupture accident:

1. the modification designed to increase the letdown capacity of the turbine bypass to atmosphere in order to increase the primary system rate of cooling and achieve a shutdown state more quickly;
2. modification of high-pressure safety injection control for this accident.

Mitigation of gaseous phase iodine releases from contaminated water

[CR-B] The licensee shall take steps, in the event of a severe accident, to achieve a significant reduction in gaseous phase iodine releases from the contaminated water present in the reactor building containment, as well as in the fuel building in the event of recirculation of this water.

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Organisational and Human Factors

Re-evaluation of organisations, procedures, tools and human behaviours

[FOH-A] The licensee shall, no later than 31 December 2024, evaluate the ability of the complex sociotechnical systems constituting its NPPs to deal with the diversity of actual operating situations.

To do this, the licensee shall, no later than 31 December 2021, send ASN a study programme including the impact of the approaches designed to standardise organisations, procedures, tools and human behaviours. Of the operating activities studied, this programme includes those contributing to managing conformity and maintaining it over time, notably via the detection and processing of deviations.

Ability of the operators to perform the actions in the rooms

[FOH-B] The licensee shall check that the operators are actually able to access the rooms and carry out the control actions in them as required by the nuclear safety case in the event of an accident, severe accident, or hazard (for example, the accessibility of the I&C devices, the ability to perform actions if personal protection equipment is worn, the availability of the necessary tools, the time needed for access).

The licensee shall define any changes to be implemented and the corresponding schedule.

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Management of non-radiological risks and detrimental effects resulting from normal operation

Conformity of facilities

[INC-A] I.– The licensee shall, no later than 30 June 2021, send ASN the programme for checking the conformity of its installations, which is to be implemented during the periodic safety review of each reactor with regard to the detrimental effects resulting from normal operation, along with the non-radiological risks.

This conformity is assessed on the basis of the above-mentioned regulations of 18 December 2006, 16 December 2008 and 22 May 2012, provisions regarding detrimental effects resulting from normal operation and non-radiological risks as set out in the above-mentioned Order of 7 February 2012, the above-mentioned resolutions of 16 July 2013, 21 April 2015, 6 December 2016, 23 March 2017 and 6 April 2017 and the individual resolutions applicable to water intake and consumption, effluent discharges and environmental monitoring.

The licensee shall justify the scope of the equipment included in this inspection programme. The scope notably includes the civil engineering structures and the equipment needed to manage the detrimental effects of the installations in normal operation and the non-radiological risks, more particularly the elements important for protection allowing treatment of effluents and conditioning of waste.

This inspection programme includes in-situ checks on civil engineering structures and equipment and a review of the relevance of the routine inspection and maintenance operations in the light of their objectives and the corresponding best available techniques.

II.– The licensee shall send ASN a statement of the conformity of its installation in the light of the results of the inspections mentioned in I and the measures it has defined to correct any deviations detected.

Installation impact assessments

[INC-B] I.– The licensee shall consolidate the impact assessment updates produced so far, in the format set out in Articles R. 122-5 and R. 593-17 of the Environment Code. It thus ensures:

- that account is taken of changes to the state of knowledge, more specifically with regard to the evaluation of the impacts of discharges from the facilities and changes to the site environment;
- that the impact of the facilities on the climate and the vulnerability of the facilities to climate change is described, more particularly with regard to discharges of heat, the management of liquid discharges and use of water resources.

It may base its study on existing data and analyses when they are still relevant, in particular when it has evaluated certain impacts on the environment during the course of recent modifications.

If no significant change is identified, the licensee may reuse the existing environmental data in the description of the relevant aspects of the state of the environment.

II.– The licensee shall specify the improvements designed to reduce the impacts of its facilities on the environment that it intends to take in the light of the conclusions of the impact assessment mentioned in I and the best available techniques, along with the corresponding implementation schedule.

III.– The licensee shall, no later than 31 December 2023, submit a study presenting the combined impact on the Rhône and Loire rivers of the NPPs located on their banks.

Appendix 2
to ASN Resolution 2021-DC-0706 of 23 February 2021
setting prescriptions on Électricité de France (EDF) applicable
to the reactors of the NPPs of Blayais (BNIs 86 and 110),
Bugey (BNIs 78 and 89), Chinon (BNIs 107 and 132),
Cruas (BNIs 111 and 112), Dampierre-en-Burly (BNIs 84 and 85),
Gravelines (BNIs 96, 97 and 122), Saint-Laurent-des-Eaux (BNI 100)
and Tricastin (BNIs 87 and 88) in the light of the conclusions of the generic phase
of their fourth periodic safety review

This Appendix sets the deadlines specific to each reactor for the requirements given in Appendix 1.

Note: for information, the shaded deadlines correspond to the deadline for submission of the periodic safety review concluding report.

Blayais NPP

Requirements	Deadlines			
	Reactor n° 1	**Reactor n° 2**	**Reactor n° 3**	**Reactor n° 4**
CONF-C II 1	28/12/2025	31/12/2025	31/12/2025	31/12/2025
CONF-C II 2	28/12/2027	31/12/2027	31/12/2027	31/12/2027
CONF-D	28/12/2022	30/07/2024	24/02/2026	01/04/2026
CONF-E	31/12/2023	30/07/2024	24/02/2026	01/04/2026
AGR-A	28/12/2027	30/07/2024	24/02/2026	01/04/2026
AGR-B II	28/12/2027	30/07/2029	24/02/2031	01/04/2031
AGR-D II	28/12/2027	30/07/2029	24/02/2031	01/04/2031
AGR-E I	28/12/2027	30/07/2024	24/02/2026	01/04/2026
AGR-E II	28/12/2027	30/07/2024	24/02/2026	01/04/2026
AGR-E III	28/12/2027	30/07/2029	24/02/2031	01/04/2031
AGR-F I	28/12/2025			
AGR-F II	28/12/2027	30/07/2029	24/02/2031	01/04/2031
AGR-F III	28/12/2025			
PISC-A I	28/12/2022	30/07/2024	24/02/2026	01/04/2026
PISC-A II	31/12/2023	30/07/2024	24/02/2026	01/04/2026
PISC-A III	28/12/2027	30/07/2029	24/02/2031	01/04/2031
PISC-B I	28/12/2027	30/07/2024	24/02/2026	01/04/2026
PISC-C	28/12/2027	30/07/2029	24/02/2031	01/04/2031
AG-A I	28/12/2022	30/07/2024	24/02/2026	01/04/2026
AG-A II 3	28/12/2027	30/07/2029	24/02/2031	01/04/2031
AG-A III	28/12/2027	30/07/2029	24/02/2031	01/04/2031
AG-B I	28/12/2022	30/07/2024	24/02/2026	01/04/2026
AG-B II 2	28/12/2027	30/07/2029	24/02/2031	01/04/2031
AG-B III and IV	28/12/2027	30/07/2029	24/02/2031	01/04/2031
AG-C I	28/12/2027	30/07/2029	24/02/2031	01/04/2031
AG-C II	28/12/2027	30/07/2029	24/02/2031	01/04/2031
AG-D I and II	28/12/2027	30/07/2029	24/02/2031	01/04/2031
AG-D III	28/12/2024			
ND-A	28/12/2027	30/07/2029	24/02/2031	01/04/2031
ND-B	28/12/2027	30/07/2029	24/02/2031	01/04/2031
ND-C	28/12/2027	30/07/2029	24/02/2031	01/04/2031
CR-A II 1	28/12/2022	30/07/2024	24/02/2026	01/04/2026
CR-A II 2	28/12/2022	30/07/2024	24/02/2026	01/04/2026
CR-B	28/12/2027	30/07/2029	24/02/2031	01/04/2026
FOH-B	31/12/2023	30/07/2024	24/02/2026	01/04/2026
INC-A II	31/12/2022	30/07/2024	24/02/2026	01/04/2026
INC-B I and II	28/12/2022			

Bugey NPP

Requirements	Deadlines			
	Reactor n° 2	**Reactor n° 3**	**Reactor n° 4**	**Reactor n° 5**
CONF-C II 1	27/04/2024	31/12/2025	21/12/2024	15/06/2025
CONF-C II 2	27/04/2026	31/12/2027	21/12/2026	15/06/2027
CONF-D	27/04/2026	30/04/2029	21/12/2026	15/06/2027
CONF-E	31/12/2023	30/04/2024	31/12/2023	31/12/2023
AGR-A	27/04/2026	30/04/2024	21/12/2026	15/06/2027
AGR-B II	27/04/2026	30/04/2029	21/12/2026	15/06/2027
AGR-D II	27/04/2026	30/04/2029	21/12/2026	15/06/2027
AGR-E I	27/04/2026	30/04/2024	21/12/2026	15/06/2027
AGR-E II	27/04/2026	30/04/2024	21/12/2026	15/06/2027
AGR-E III	27/04/2026	30/04/2029	21/12/2026	15/06/2027
AGR-F I	27/04/2024			
AGR-F II	27/04/2027	30/04/2029	21/12/2027	15/06/2028
AGR-F III	27/04/2024			
Etude-C II	27/04/2027	30/04/2029	21/12/2026	15/06/2028
PISC-A I	27/04/2021	30/04/2024	21/12/2021	15/06/2022
PISC-A II	31/12/2023	30/04/2024	31/12/2023	31/12/2023
PISC-A III	27/04/2026	30/04/2029	21/12/2026	15/06/2027
PISC-B I	27/04/2026	30/04/2024	21/12/2026	15/06/2027
PISC-C	27/04/2027	30/04/2029	21/12/2027	15/06/2028
AG-A I	27/04/2021	30/04/2024	21/12/2021	15/06/2022
AG-A III	27/04/2027	30/04/2029	21/12/2027	15/06/2028
AG-B I	27/04/2021	30/04/2024	21/12/2021	15/06/2022
AG-B II 2	27/04/2027	30/04/2029	21/12/2027	15/06/2028
AG-B III and IV	27/04/2027	30/04/2029	21/12/2027	15/06/2028
AG-C I	27/04/2027	30/04/2029	21/12/2027	15/06/2028
AG-C II	27/04/2027	30/04/2029	21/12/2027	15/06/2028
AG-D I and II	27/04/2027	30/04/2029	21/12/2027	15/06/2028
AG-D III	27/04/2024			
ND-A	27/04/2026	30/04/2029	21/12/2026	15/06/2027
ND-B	27/04/2027	30/04/2029	21/12/2027	15/06/2028
ND-C	27/04/2027	30/04/2029	21/12/2027	15/06/2028
CR-A II 1	27/04/2021	30/04/2024	21/12/2021	15/06/2022
CR-A II 2	27/04/2026	30/04/2029	21/12/2026	15/06/2027
CR-B	27/04/2026	30/04/2029	21/12/2026	15/06/2027
FOH-B	31/12/2023	30/04/2024	31/12/2023	31/12/2023
INC-A II	31/12/2022	30/04/2024	31/12/2022	31/12/2022
INC-B I and II	30/09/2021			

Chinon NPP

Requirements	Deadlines			
	Reactor n° B1	**Reactor n° B2**	**Reactor n° B3**	**Reactor n° B4**
CONF-C II 1	31/12/2025	31/12/2025	31/12/2025	31/12/2025
CONF-C II 2	31/12/2027	31/12/2027	31/12/2027	31/12/2027
CONF-D	24/04/2024	21/03/2027	25/06/2030	15/03/2031
CONF-E	24/04/2024	21/03/2027	25/06/2030	15/03/2031
AGR-A	24/04/2024	21/03/2027	25/06/2030	15/03/2031
AGR-B II	24/04/2029	21/03/2032	25/06/2035	15/03/2036
AGR-D II	24/04/2029	21/03/2032	25/06/2035	15/03/2036
AGR-E I	24/04/2024	21/03/2027	25/06/2030	15/03/2031
AGR-E II	24/04/2024	21/03/2027	25/06/2030	15/03/2031
AGR-E III	24/04/2029	21/03/2032	25/06/2035	15/03/2036
AGR-F I	24/04/2027			
AGR-F II	24/04/2029	21/03/2032	25/06/2035	15/03/2036
AGR-F III	24/04/2027			
PISC-A I	24/04/2024	21/03/2027	25/06/2030	15/03/2031
PISC-A II	24/04/2024	21/03/2027	25/06/2030	15/03/2031
PISC-A III	24/04/2029	21/03/2032	25/06/2035	15/03/2036
PISC-B I	24/04/2024	21/03/2027	25/06/2030	15/03/2031
PISC-C	24/04/2029	21/03/2032	25/06/2035	15/03/2036
AG-A I	24/04/2024	21/03/2027	25/06/2030	15/03/2031
AG-A II 3	24/04/2029	21/03/2027	25/06/2030	15/03/2031
AG-A III	24/04/2029	21/03/2032	25/06/2035	15/03/2036
AG-B I	24/04/2024	21/03/2027	25/06/2030	15/03/2031
AG-B II 2	24/04/2029	21/03/2032	25/06/2035	15/03/2036
AG-B III and IV	24/04/2029	21/03/2032	25/06/2035	15/03/2036
AG-C I	24/04/2029	21/03/2032	25/06/2035	15/03/2036
AG-C II	24/04/2029	21/03/2032	25/06/2035	15/03/2036
AG-D I and II	24/04/2029	21/03/2032	25/06/2035	15/03/2036
AG-D III	24/04/2026			
ND-A	24/04/2029	21/03/2032	25/06/2035	15/03/2036
ND-B	24/04/2029	21/03/2032	25/06/2035	15/03/2036
ND-C	24/04/2029	21/03/2032	25/06/2035	15/03/2036
CR-A II 1	24/04/2024	21/03/2027	25/06/2030	15/03/2031
CR-A II 2	24/04/2024	21/03/2027	25/06/2030	15/03/2031
CR-B	24/04/2029	21/03/2027	25/06/2030	15/03/2031
FOH-B	24/04/2024	21/03/2027	25/06/2030	15/03/2031
INC-A II	24/04/2024	21/03/2027	25/06/2030	15/03/2031
INC-B I and II	24/04/2024			

Cruas NPP

Requirements	Deadlines			
	Reactor n° 1	**Reactor n° 2**	**Reactor n° 3**	**Reactor n° 4**
CONF-C II 1	31/12/2025	31/12/2025	31/12/2025	31/12/2025
CONF-C II 2	31/12/2027	31/12/2027	31/12/2027	31/12/2027
CONF-D	11/03/2026	29/07/2029	02/06/2025	11/01/2027
CONF-E	11/03/2026	29/07/2029	02/06/2025	11/01/2027
AGR-A	11/03/2026	29/07/2029	02/06/2025	11/01/2027
AGR-B II	11/03/2031	29/07/2034	02/06/2030	11/01/2032
AGR-D II	11/03/2031	29/07/2034	02/06/2030	11/01/2032
AGR-E I	11/03/2026	29/07/2029	02/06/2025	11/01/2027
AGR-E II	11/03/2026	29/07/2029	02/06/2025	11/01/2027
AGR-E III	11/03/2031	29/07/2034	02/06/2030	11/01/2032
AGR-F I	02/06/2028			
AGR-F II	11/03/2031	29/07/2034	02/06/2030	11/01/2032
AGR-F III	02/06/2028			
PISC-A I	11/03/2026	29/07/2029	02/06/2025	11/01/2027
PISC-A II	11/03/2026	29/07/2029	02/06/2025	11/01/2027
PISC-A III	11/03/2031	29/07/2034	02/06/2030	11/01/2032
PISC-B I	11/03/2026	29/07/2029	02/06/2025	11/01/2027
PISC-C	11/03/2031	29/07/2034	02/06/2030	11/01/2032
AG-A I	11/03/2026	29/07/2029	02/06/2025	11/01/2027
AG-A III	11/03/2031	29/07/2034	02/06/2030	11/01/2032
AG-B I	11/03/2026	29/07/2029	02/06/2025	11/01/2027
AG-B II 2	11/03/2031	29/07/2034	02/06/2030	11/01/2032
AG-B III and IV	11/03/2031	29/07/2034	02/06/2030	11/01/2032
AG-C I	11/03/2031	29/07/2034	02/06/2030	11/01/2032
AG-C II	11/03/2031	29/07/2034	02/06/2030	11/01/2032
AG-D I and II	11/03/2031	29/07/2034	02/06/2030	11/01/2032
AG-D III	02/06/2027			
ND-A	11/03/2031	29/07/2034	02/06/2030	11/01/2032
ND-B	11/03/2031	29/07/2034	02/06/2030	11/01/2032
ND-C	11/03/2031	29/07/2034	02/06/2030	11/01/2032
CR-A II 1	11/03/2026	29/07/2029	02/06/2025	11/01/2027
CR-A II 2	11/03/2026	29/07/2029	02/06/2025	11/01/2027
CR-B	11/03/2026	29/07/2029	02/06/2030	11/01/2027
FOH-B	11/03/2026	29/07/2029	02/06/2025	11/01/2027
INC-A II	11/03/2026	29/07/2029	02/06/2025	11/01/2027
INC-B I and II	02/06/2025			

Dampierre-en-Burly NPP

Requirements	Deadlines			
	Reactor n° 1	**Reactor n° 2**	**Reactor n° 3**	**Reactor n° 4**
CONF-C II 1	06/02/2025	06/11/2025	31/12/2025	31/12/2025
CONF-C II 2	06/02/2027	06/11/2027	31/12/2027	31/12/2027
CONF-D	06/02/2022	06/11/2022	27/06/2024	07/04/2025
CONF-E	31/12/2023	31/12/2023	27/06/2024	07/04/2025
AGR-A	06/02/2027	06/11/2027	27/06/2024	07/04/2025
AGR-B II	06/02/2027	06/11/2027	27/06/2029	07/04/2030
AGR-D II	06/02/2027	06/11/2027	27/06/2029	07/04/2030
AGR-E I	06/02/2027	06/11/2027	27/06/2024	07/04/2025
AGR-E II	06/02/2027	06/11/2027	27/06/2024	07/04/2025
AGR-E III	06/02/2027	06/11/2027	27/06/2029	07/04/2030
AGR-F I	06/02/2025			
AGR-F II	06/02/2028	06/11/2027	27/06/2029	07/04/2030
PISC-A I	06/02/2022	06/11/2022	27/06/2024	07/04/2025
PISC-A II	31/12/2023	31/12/2023	27/06/2024	07/04/2025
PISC-A III	06/02/2027	06/11/2027	27/06/2029	07/04/2030
PISC-B I	06/02/2027	06/11/2027	27/06/2024	07/04/2025
PISC-C	06/02/2028	06/11/2027	27/06/2029	07/04/2030
AG-A I	06/02/2022	06/11/2022	27/06/2024	07/04/2025
AG-A II 3	06/02/2027	06/11/2027	27/06/2029	07/04/2030
AG-A III	06/02/2028	06/11/2027	27/06/2029	07/04/2030
AG-B I	06/02/2022	06/11/2022	27/06/2024	07/04/2025
AG-B II 2	06/02/2028	06/11/2027	27/06/2029	07/04/2030
AG-B III and IV	06/02/2028	06/11/2027	27/06/2029	07/04/2030
AG-C I	06/02/2028	06/11/2027	27/06/2029	07/04/2030
AG-C II	06/02/2028	06/11/2027	27/06/2029	07/04/2030
AG-D I and II	06/02/2028	06/11/2027	27/06/2029	07/04/2030
AG-D III	06/02/2024			
ND-A	06/02/2027	06/11/2027	27/06/2029	07/04/2030
ND-B	06/02/2028	06/11/2027	27/06/2029	07/04/2030
ND-C	06/02/2028	06/11/2027	27/06/2029	07/04/2030
CR-A II 1	06/02/2022	06/11/2022	27/06/2024	07/04/2025
CR-A II 2	06/02/2022	06/11/2022	27/06/2024	07/04/2025
CR-B	06/02/2027	06/11/2027	27/06/2029	07/04/2030
FOH-B	31/12/2023	31/12/2023	27/06/2024	07/04/2025
INC-A II	31/12/2022	31/12/2022	27/06/2024	07/04/2025
INC-B I and II	06/02/2022			

Gravelines NPP

Requirements	Deadlines					
	Reactor n° 1	**Reactor n° 2**	**Reactor n° 3**	**Reactor n° 4**	**Reactor n° 5**	**Reactor n° 6**
CONF-C II 1	14/09/2025	31/12/2025	31/12/2025	31/12/2025	31/12/2025	31/12/2025
CONF-C II 2	14/09/2027	31/12/2027	31/12/2027	31/12/2027	31/12/2027	31/12/2027
CONF-D	14/09/2022	21/03/2024	30/04/2023	19/12/2024	02/11/2027	14/06/2030
CONF-E	31/12/2023	21/03/2024	31/12/2023	19/12/2024	02/11/2027	14/06/2030
AGR-A	14/09/2027	21/03/2024	30/04/2028	19/12/2024	02/11/2027	14/06/2030
AGR-B II	14/09/2027	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
AGR-D II	14/09/2027	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
AGR-E I	14/09/2027	21/03/2024	30/04/2028	19/12/2024	02/11/2027	14/06/2030
AGR-E II	14/09/2027	21/03/2024	30/04/2028	19/12/2024	02/11/2027	14/06/2030
AGR-E III	14/09/2027	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
AGR-F I	14/09/2025					
AGR-F II	14/09/2028	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
PISC-A I	14/09/2022	21/03/2024	30/04/2023	19/12/2024	02/11/2027	14/06/2030
PISC-A II	31/12/2023	21/03/2024	31/12/2023	19/12/2024	02/11/2027	14/06/2030
PISC-A III	14/09/2027	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
PISC-B I	14/09/2027	21/03/2024	30/04/2028	19/12/2024	02/11/2027	14/06/2030
PISC-C	14/09/2028	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
AG-A I	14/09/2022	21/03/2024	30/04/2023	19/12/2024	02/11/2027	14/06/2030
AG-A III	14/09/2028	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
AG-B I	14/09/2022	21/03/2024	30/04/2023	19/12/2024	02/11/2027	14/06/2030
AG-B II 2	14/09/2028	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
AG-B III and IV	14/09/2028	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
AG-C I	14/09/2028	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
AG-C II	14/09/2028	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
AG-D I and II	14/09/2028	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
AG-D III	14/09/2024					
ND-A	14/09/2027	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
ND-B	14/09/2028	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
ND-C	14/09/2028	21/03/2029	30/04/2028	19/12/2029	02/11/2032	14/06/2035
CR-A II 1	14/09/2022	21/03/2024	30/04/2023	19/12/2024	02/11/2027	14/06/2030
CR-A II 2	14/09/2022	21/03/2024	30/04/2023	19/12/2024	02/11/2027	14/06/2030
CR-B	14/09/2027	21/03/2029	30/04/2028	19/12/2029	02/11/2027	14/06/2030
FOH-B	31/12/2023	21/03/2024	31/12/2023	19/12/2024	02/11/2027	14/06/2030
INC-A II	31/12/2022	21/03/2024	30/04/2023	19/12/2024	02/11/2027	14/06/2030
INC-B I and II	14/09/2022					

Saint-Laurent-des-Eaux NPP

Requirements	Deadlines	
	Reactor n° B1	**Reactor n° B2**
CONF-C II 1	31/12/2025	31/12/2025
CONF-C II 2	31/12/2027	31/12/2027
CONF-D	17/12/2025	13/02/2024
CONF-E	17/12/2025	13/02/2024
AGR-A	17/12/2025	13/02/2024
AGR-B II	17/12/2030	13/02/2029
AGR-D II	17/12/2030	13/02/2029
AGR-E I	17/12/2025	13/02/2024
AGR-E II	17/12/2025	13/02/2024
AGR-E III	17/12/2030	13/02/2029
AGR-F I	13/02/2027	
AGR-F II	17/12/2030	13/02/2029
PISC-A I	17/12/2025	13/02/2024
PISC-A II	17/12/2025	13/02/2024
PISC-A III	17/12/2030	13/02/2029
PISC-B I	17/12/2025	13/02/2024
PISC-C	17/12/2030	13/02/2029
AG-A I	17/12/2025	13/02/2024
AG-A II 3	17/12/2030	13/02/2029
AG-A III	17/12/2030	13/02/2029
AG-B I	17/12/2025	13/02/2024
AG-B II 2	17/12/2030	13/02/2029
AG-B III and IV	17/12/2030	13/02/2029
AG-C I	17/12/2030	13/02/2029
AG-C II	17/12/2030	13/02/2029
AG-D I and II	17/12/2030	13/02/2029
AG-D III	13/02/2026	
ND-A	17/12/2030	13/02/2029
ND-B	17/12/2030	13/02/2029
ND-C	17/12/2030	13/02/2029
CR-A II 1	17/12/2025	13/02/2024
CR-A II 2	17/12/2025	13/02/2024
CR-B	17/12/2025	13/02/2029
FOH-B	17/12/2025	13/02/2024
INC-A II	17/12/2025	13/02/2024
INC-B I and II	13/02/2024	

Tricastin NPP

Requirements	Deadlines			
	Reactor n° 1	**Reactor n° 2**	**Reactor n° 3**	**Reactor n° 4**
CONF-C II 1	22/02/2023	18/11/2024	31/12/2025	31/12/2025
CONF-C II 2	22/02/2025	18/11/2026	31/12/2027	31/12/2027
CONF-D	22/02/2025	18/11/2026	05/03/2023	18/06/2025
CONF-E	31/12/2023	31/12/2023	31/12/2023	18/06/2025
AGR-A	22/02/2025	18/11/2026	05/03/2028	18/06/2025
AGR-B II	22/02/2025	18/11/2026	05/03/2028	18/06/2030
AGR-D II	22/02/2025	18/11/2026	05/03/2028	18/06/2030
AGR-E I	22/02/2025	18/11/2026	05/03/2028	18/06/2025
AGR-E II	22/02/2025	18/11/2026	05/03/2028	18/06/2025
AGR-E III	22/02/2025	18/11/2026	05/03/2028	18/06/2030
AGR-F I	22/02/2023			
AGR-F II	22/02/2026	18/11/2027	05/03/2028	18/06/2030
AGR-F III	22/02/2023			
PISC-A I		18/11/2021	05/03/2023	18/06/2025
PISC-A II	31/12/2023	31/12/2023	31/12/2023	18/06/2025
PISC-A III	22/02/2025	18/11/2026	05/03/2028	18/06/2030
PISC-B I	22/02/2025	18/11/2026	05/03/2028	18/06/2025
PISC-C	22/02/2026	18/11/2027	05/03/2028	18/06/2030
AG-A I		18/11/2021	05/03/2023	18/06/2025
AG-A III	22/02/2026	18/11/2027	05/03/2028	18/06/2030
AG-B I		18/11/2021	05/03/2023	18/06/2025
AG-B II 2	22/02/2026	18/11/2027	05/03/2028	18/06/2030
AG-B III and IV	22/02/2026	18/11/2027	05/03/2028	18/06/2030
AG-C I	22/02/2026	18/11/2027	05/03/2028	18/06/2030
AG-C II	22/02/2026	18/11/2027	05/03/2028	18/06/2030
AG-D I and II	22/02/2026	18/11/2027	05/03/2028	18/06/2030
AG-D III	22/02/2023			
ND-A	22/02/2025	18/11/2026	05/03/2028	18/06/2030
ND-B	22/02/2026	18/11/2027	05/03/2028	18/06/2030
ND-C	22/02/2026	18/11/2027	05/03/2028	18/06/2030
CR-A II 1		18/11/2021	05/03/2023	18/06/2025
CR-A II 2	31/12/2022	31/12/2023	05/03/2023	18/06/2025
CR-B	22/02/2025	18/11/2026	05/03/2028	18/06/2030
FOH-B	31/12/2023	31/12/2023	31/12/2023	18/06/2025
INC-A II	31/12/2022	31/12/2022	05/03/2023	18/06/2025
INC-B I and II	31/03/2021			