Decision n ° 2021-DC-0706 of the Nuclear Safety Authority of 23 February 2021 setting for the company Électricité de France (EDF) the requirements applicable to reactors of nuclear power plants in Blayais (BNI n ° 86 and n ° 110), du Bugey (BNI n ° 78 and n ° 89), Chinon (INB n ° 107 and n ° 132), of Cruas (INB n ° 111 and n ° 112), of Dampierre-en-Burly (INB n ° 84 and n ° 85), of Gravelines (INB n ° 96, n ° 97 and n ° 122), of Saint-Laurent-des-Eaux (INB n ° 100) and of Tricastin (INB n ° 87 and n ° 88) in view of the conclusions of the generic phase of their fourth periodic review

The Nuclear Safety Authority,

Having regard to Regulation No. 1907/2006 of the European Parliament and of the Council of December 18, 2006 concerning the registration, evaluation and authorization of chemical substances, as well as the restrictions applicable to these substances (REACH);

Having regard to Regulation No. 1272/2008 of the European Parliament and of the Council of December 16, 2008 relating to the classification, labeling and packaging of substances and mixtures;

Having regard to Regulation n ° 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and the use of biocidal products;

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

Having regard to the decree of 20 November 1972 authorizing the creation by Electricité de France of the Bugey nuclear power plant (2 e and 3 e slices) in the department of Ain;

Considering the decree n ° 76-771 of July 27, 1976 authorizing the creation by Electricité de France of the fourth and fifth sections of the nuclear production plant of Bugey, in the department of Ain;

Considering the decree of June 14, 1976 authorizing the creation by Electricité de France of two units of the Blayais nuclear power plant in the Gironde department;

Considering the decree of June 14, 1976 authorizing the creation by Electricité de France of four units of the Dampierre-en-Burly nuclear power plant in the Loiret department;

Considering decree n ° 76-594 of 2 July 1976 modified authorizing the creation by Electricité de France of four units of the Tricastin nuclear power plant in the department of Drôme;

Considering decree n ° 77-1190 of October 24, 1977, as amended, authorizing the creation by Electricité de France of four units of the Gravelines nuclear power plant in the Nord department;

Considering the decree of March 8, 1978 authorizing the creation by Electricité de France of two units of the nuclear power station of Saint-Laurent-des-Eaux in the department of Loir-et-Cher;

Considering the decree of December 4, 1979 authorizing the creation by Electricité de France of two sections of the Chinon nuclear power plant in the department of Indre-et-Loire;

Considering the decree of February 5, 1980 authorizing the creation by Electricité de France of two units of the Blayais nuclear power plant, in the Gironde department;

Considering the decree of December 8, 1980 authorizing the creation by Electricité de France of four units of the Cruas nuclear power plant in the Ardèche department;

Considering the amended decree of December 18, 1981 authorizing the creation by Electricité de France of two units of the Gravelines nuclear power plant in the Nord department;

Considering the decree of October 7, 1982 authorizing the creation by Electricité de France of units B 3 and B 4 of the Chinon nuclear power plant in the department of Indre-et-Loire and modifying the perimeter of the basic nuclear installation made up of units B 1 and B 2 of this plant;

Having regard to the amended order of 7 February 2012 setting the general rules relating to basic nuclear installations;

Considering decisions n ° 2012-DC-0276, n ° 2012-DC-0275, n ° 2012-DC-0278, n ° 2012-DC-0281, n ° 2012DC-0282, n ° 2012-DC-0286, n ° 2012-DC-0291 and 2012-DC-0292 of the Nuclear Safety Authority of June 26, 2012 fixing Electricité de France - Société Anonyme (EDF-SA) additional requirements applicable respectively to the nuclear power plants of Bugey (Ain), Blayais (Gironde), Chinon (Indre-et-Loire), Cruas (Ardèche), Dampierre (Loiret), Gravelines (Nord), SaintLaurent (Loir-et-Cher) and Tricastin (Drôme) in view of the conclusions of the evaluations additional safety devices (DHW) of BNIs n bone 78, 89, 86, 110, 107, 132, 111, 112, 84, 85, 96, 97, 122, 100, 87 and 88;

Considering the decision n ° 2013-DC-0360 of the Nuclear Safety Authority of July 16, 2013 as amended relating to the control of nuisances and the impact on health and the environment of basic nuclear installations;

Considering decisions n ° 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 the Nuclear Safety Authority of January 21, 2014 setting for Électricité de France - Société Anonyme (EDF-SA) the additional requirements applicable respectively to the nuclear power plants of Bugey (Ain), Blayais (Gironde), Chinon (Indre-et -Loire), Cruas (Ardèche), Dampierre (Loiret), Gravelines (Nord), Saint-Laurent (Loir-et-Cher) and Tricastin (Drôme) in view of the examination of the file presented by the operator in accordance with the prescription (ECS-1) of the aforementioned decisions of June 26, 2012;

Considering the decision n ° 2014-DC-0444 of the Nuclear Safety Authority of July 15, 2014 relating to the shutdowns and restarting of pressurized water nuclear power reactors;

Considering the decision n ° 2015-DC-0508 of the Nuclear Safety Authority of April 21, 2015 relating to the study on waste management and the balance sheet of waste produced in basic nuclear installations;

Considering the decision n ° 2016-DC-0578 of the Nuclear Safety Authority of December 6, 2016 relating to the prevention of risks resulting from the dispersion of pathogenic microorganisms (legionella and amoeba) by the cooling installations of the secondary circuit of pressurized water nuclear power reactors;

Considering the decision n ° 2017-DC-0587 of the Nuclear Safety Authority of March 23, 2017 relating to the conditioning of radioactive waste and the conditions of acceptance of radioactive waste packages in basic nuclear repository installations;

Considering the decision n ° 2017-DC-0588 of the Nuclear Safety Authority of April 6, 2017 relating to the methods of water withdrawal and consumption, effluent discharge and environmental monitoring of water nuclear reactors under pressure ;

Having regard to EDF's orientation file for the fourth periodic review of 900 MWe reactors referenced EMESN130349 index C of January 24, 2014;

Having regard to EDF's note presenting the summary of its response to the objectives of the fourth periodic review of 900 MWe reactors referenced D455617307787 index B1 of September 5, 2018;

Having regard to EDF's commitments made during the examination of the generic phase of the fourth periodic review of the 900 MWe reactors;

Considering the letter from the Nuclear Safety Authority referenced CODEP-DCN-2016-007286 of April 20, 2016 relating to the generic orientations of the fourth periodic review of EDF's 900 MWe reactors;

Having regard to the investigation report from the Nuclear Safety Authority;

Having regard to the results of the consultation carried out by the High Committee for Transparency and Information on Nuclear Safety from September 6, 2018 to March 31, 2019 on improving the safety of EDF's 900 MWe reactors as part of their fourth periodic review;

Having regard to EDF's observations dated January 8, 2021;

Having regard to the results of the public consultation carried out on the website of the Nuclear Safety Authority from December 3, 2020 to January 22, 2021;

Considering the objectives of the fourth periodic review of EDF's 900 MWe reactors specified in its file of January 24, 2014 and the aforementioned letter from the Nuclear Safety Authority of April 20, 2016;

Considering the studies carried out by EDF during the generic phase of this review and the measures it plans to implement for each of the reactors concerned;

Considering the commitments made by EDF during the appraisal; that these commitments contribute to the achievement of the objectives set for this periodic review;

Considering the conclusions of the instruction of the Nuclear Safety Authority appearing in the aforementioned report;

Considering that this instruction revealed the need to prescribe certain provisions necessary to achieve the objectives set for this periodic review as well as their deadlines;

Considering the timetable proposed by EDF for the deployment of all the provisions on the installations; that this schedule provides, given the nature and scale of the associated operations, to implement these provisions either when the review conclusion report is submitted, or five years after that date, as well as the deadlines specific for the first reactors carrying out their fourth periodic review;

Considering that the schedule for deploying the provisions on the installations must take into account their importance for safety and the capacity of the industrial fabric to achieve them with the expected level of quality, as well as the necessary associated training for operators to appropriate these developments; that the major part of the safety improvements must be carried out during the ten-yearly inspection,

Decide:

Article 1er

This decision is applicable to the reactors of the nuclear power plants of Bugey (INB n ° 78 and 89), Blayais (INB n ° 86 and n ° 110), Chinon (INB n ° 107 and n ° 132), Cruas (INB n ° 111 and n ° 112), Dampierre-en-Burly (INB n ° 84 and n ° 85), Gravelines (INB n ° 96, n ° 97 and n ° 122), SaintLaurent-des-Eaux (INB n ° 100) and Tricastin (INB n ° 87 and n ° 88).

Appendix 1 sets out the requirements that EDF, hereinafter referred to as “the operator”, must meet for the continued operation of its 900 MWe reactors, in light of the conclusions of the generic phase of their fourth periodic review.

Annex 2 sets the specific deadlines for each reactor.

Article 2

This decision is taken 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 prescriptions that the Nuclear Safety Authority could take in application of Articles R. 593-38 and R. 593-40 of this same code;
- prescriptions that the Nuclear Safety Authority may adopt, after analyzing the report concluding the review of each of the reactors, in application of Article L. 593-19 of the Environment Code.

Article 3

Until the complete completion of the actions to meet the requirements set out in the annex to this decision, the operator shall submit, by 30 June of each year at the latest, those implemented during the previous year, as well as those which remain to be carried out and their programming.

In this context, it presents the lessons it draws from the implementation on the sites of the provisions resulting from the periodic review. It decides on its industrial capacity and that of external stakeholders to carry out the actions mentioned in the previous paragraph on time. In the event of a risk of non-compliance with deadlines, it specifies the additional measures that it is implementing to remedy the shortcomings observed.

The operator makes the information mentioned in the two previous paragraphs public.

Article 4

This decision may be referred to the Council of State by the operator, within two months from the date of notification.

Article 5

The Director General of the Nuclear Safety Authority is responsible for implementing this decision, which will be notified to the operator and published in the *Official Bulletin* of the Nuclear Safety Authority.

Done in Montrouge, February 23, 2021.

The College of the Nuclear Safety Authority,

Signed by :

Bernard DOROSZCZUK

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

Annex 1

to decision n ° 2021-DC-0706 of the Nuclear Safety Authority of 23 February 2021 fixing for the company Électricité de France (EDF) the requirements applicable to the reactors of nuclear power plants in Blayais (BNI n ° 86 and n ° 110), du Bugey (BNI n ° 78 and n ° 89), Chinon (INB n ° 107 and n ° 132), of Cruas (INB n ° 111 and n ° 112), of Dampierre-en-Burly (INB n ° 84 and n ° 85), of Gravelines (INB n ° 96, n ° 97 and n ° 122), of Saint-Laurent-des-Eaux (INB n ° 100) and of Tricastin (INB n ° 87 and n ° 88) in view of the conclusions of the generic phase of their fourth periodic review

For the application of the annex to this decision:

- "Review conclusion report" means the report provided for in the first paragraph of Article L. 593-19 of the Environment Code for the fourth periodic review of a nuclear reactor;
- the definitions of article 1 er. 3 of the aforementioned decree of 7 February 2012 are used;
- the terms "hard core" and "hard core situations" are used within the meaning of the aforementioned decisions of January 21, 2014;
- The term "CPY type reactors" is understood to mean the reactors of nuclear power plants in Blayais, Chinon, Cruas, Dampierre-en-Burly, Gravelines, Saint-Laurent-des-Eaux and Tricastin.

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State of knowledge

[GEN] Before submitting the review conclusion report, the licensee checks that the state of knowledge on which the generic phase of the periodic review is based remains relevant with regard to changes in knowledge and experience feedback. Otherwise, the licensee presents in this report the measures it has taken or is planning to integrate these changes.

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Compliance of installations and aging control

Resorption of detected deviations

[CONF-A] Without prejudice to the provisions of section 6 of title II of the abovementioned order of February 7, 2012, the licensee corrects, at the latest during the ten-yearly inspection preceding the submission of the report concluding the review, the deviations having an impact on security that will have been identified prior to it. In the event of a particular difficulty, the operator justifies, in the file accompanying the request for agreement mentioned in article 2.4.1 of the appendix to the aforementioned decision of July 15, 2014, the postponement of the elimination of these deviations to - beyond the ten-year inspection and the associated schedule.

For the deviations detected during this ten-year inspection which could not be corrected during this inspection, the operator justifies the timetable for their elimination in the context of the file mentioned in the first paragraph.

Specific tests

[CONF-B] I.– No later than December 31, 2021, in order to ensure that reactors continue to comply with the applicable safety requirements, to verify the fulfillment of safety functions and to identify any deviations, the operator completes its specific test program through the following tests:

1. tests to verify the operation of the emergency power supply system for steam generators (ASG) in specific configurations of accident situations:
   - the capacity of the turbopump of this system to operate with a low level of the supply tank in order to ensure, under these conditions, the absence of phenomena liable to jeopardize the water supply to the steam generators . The test program includes a test on at least one reactor of the Bugey nuclear power plant and one CPY type reactor,
   - the capacity of the turbopump of this system to operate in a durable and prolonged manner without ventilation of its room in a situation of total loss of electric power supplies. The test program includes a test on at least one reactor of the Bugey nuclear power plant and one CPY type reactor;
2. tests making it possible to verify the capacity of the emergency generators (LHG and LHH systems for the Bugey nuclear power plant and LHP and LHQ for the CPY type reactors) to operate for a prolonged period for at least 48 hours. The test program includes a test *in situ* on at least one reactor of each nuclear power plant comprising 900 MWe reactors;
3. tests making it possible to verify the effectiveness of the measures implemented after a loss of track A of the ventilation system of the premises housing the electrical equipment (DVL) making it possible to ensure the operation of the electrical equipment; the test program includes a test on at least one CPY type reactor, after the deployment of the modifications planned during the ten-yearly outage preceding the submission of the review conclusion report;
4. tests to verify the hydraulic characteristics of the pumps of the water sprinkler system in the containment (EAS) under conditions as close as possible to their operation in an accident situation; the test program includes a test on at least one reactor of the Bugey nuclear power plant and one CPY type reactor.

In this context, it justifies the choice of reactors, and where applicable of the equipment, on which the tests will be carried out, as well as the associated schedule with regard to the objectives of these tests and their conditions of realization.

II.– For each of the tests appearing in its specific test program to be carried out on CPY type reactors, the operator carries out at least one test before December 31, 2024.

For each of the tests appearing in its specific test program to be carried out on reactors at the Bugey nuclear power plant, the operator carries out at least one test before December 31. 2025.

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

[CONF-C] I.– No later than December 31, 2023 for ten reactors and December 31, 2025 for the others, the operator installs safety straps on the thermal insulation of the pipes connecting the safety injection accumulators to the main circuit, as well as on the pressurizer expansion line.

II.– The operator:

1. carry out the necessary readings on the primary pipes and the primary bottoms of the steam generators with a view to replacing the fibrous heat insulators which are liable to release fibers in the event of a breach at the foot of the steam generator;

2. replaces these fibrous heat insulators. It checks that the temperature conditions remain compatible with the operation of the equipment necessary for the safety of the installation in a normal, incident or accident situation and implements any necessary modifications.

III.– The operator:

- carry out, no later than December 31, 2023, the investigations necessary to identify the lines containing microporous heat insulators of the "Microtherm" type in the reactor building and the auxiliary lines of the reactor building equipped with "Protect 1000S" type fibrous heat insulators including the diameter is greater than 50 mm;

- complete, no later than December 31, 2025, the replacement of the “Microtherm” type microporous heat insulators in the reactor building. At the same time, it replaces the “Protect 1000S” type fibrous insulation for all the auxiliary lines in the reactor building, the diameter of which is greater than 50 mm. It checks that the temperature conditions remain compatible with the operation of the equipment necessary for the safety of the installation in a normal, incident or accident situation and implements any necessary modifications.

IV.– To later than December 31, 2021, the operator checks that the low-pressure pumps in the system safety injection (RIS) reactors at the Bugey nuclear power plant are qualified to operate in recirculation, given their risk of cavitation. If necessary, it defines the modifications to be implemented and the associated schedule.

No later than December 31, 2022, the operator checks, by tests on a representative pump, the capacity of the pumps of the containment sprinkler system (EAS) of the reactors of the Bugey nuclear power plant to perform their functions in cavitation situations likely to occur.

The tests carried out on the pumps of the safety injection system and of the containment spraying system include configurations enabling the capacity of these pumps to be evaluated to perform their function with and without valuation of the pressure in the containment. containment resulting from a loss of primary coolant accident.

V.– No later than December 31, 2024, the licensee updates its demonstration of the reliability of the water recirculation function present at the bottom of the reactor building after a loss of primary coolant accident. This update incorporates the lessons learned from filtration tests carried out under conditions representative of the installations and the accident situation.

Power margin expected for emergency generators

[CONF-D] The operator ensures, with a high level of confidence, the supply of all the equipment rescued by each emergency generator set in all situations of the safety demonstration. As such, the power balance of each emergency generator set has a margin of at least 5%. The operator implements any necessary modifications.

Enclosure containment monitoring system

[CONF-E] The operator establishes the defined requirements of the containment leak rate monitoring system in operation (SEXTEN), which is an important element for the protection which participates in the monitoring of the containment when the air masses in the containment enclosure are stable.

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Risks associated with assault

Hazards associated with outside temperatures

[AGR-A] The operator uses extreme temperatures T_E and T_{min} associated with the heat wave defined by considering:

- an annual exceedance frequency less than or equal to 10^{-2} (upper limit of the 70% confidence interval) integrating climate change until the next periodic review. This climate change takes into account the climate trends corresponding to a region relevant to the site concerned;
- the envelope values of the relevant experience feedback for the site.

Ability to cope with a situation of total loss of site power supplies in a high temperature situation

[AGR-B] I.– By December 31, 2023 at the latest, the licensee can justify the availability of the equipment necessary to manage situations of total loss of electrical power supplies (external power supplies and main emergency generators) affecting a reactor and those affecting the reactor. '' all the reactors on a site for the “long-term” outdoor temperature (TLD) of its “hot weather” benchmark.

II.– The operator implements any necessary modifications.

Ability to cope with high temperature situation beyond sizing

[AGR-C] By December 31, 2022, the operator:

- defines a hazard going beyond the temperatures retained in its “hot weather” reference system, corresponding to a ten-year return period, and justifies it with regard to the uncertainties associated with its assessment;
- checks the availability of the necessary equipment to deal with this situation, including in the event of loss of external power supplies;
- identifies any modifications that would make it possible to achieve this objective.

Risks associated with fire

[AGR-D] I.– No later than December 31, 2022, the licensee takes into account in the fire risk control studies (justification of the sectorization, effect of fumes, effects of pressure):

- all the premises of the nuclear island and the pumping station;
- envelope modeling hypotheses making it possible to determine the temperature curves reached in the premises for fires in electrical cabinets and electrical cable trays likely to be encountered. In particular, it uses a fire growth coefficient for electrical cabinet fires that is independent of the ignition conditions and representative of the achievement of a self-sustaining combustion phase.

II.– The operator implements any necessary modifications.

[AGR-E] I.– The operator defines and implements suitable operating provisions, which include actions to control heat loads and control work that could cause a fire to start, in the following premises:

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

- premises whose sectorization is ensured by at least one door, the open position of which during a fire leads to a significant increase in the risk of core meltdown or to the loss of redundant water back-up means or cooling of the fuel storage pool.

II.– The operator identifies, regardless of their reliability, the fire protection measures the failure of which leads to a significant increase in the risk of core meltdown or to the loss of redundant water back-up resources or resources. for cooling the fuel storage pool.

It implements means making it possible to reduce the risk of failure of these measures and defines the operating requirements associated with these means.

III.– The operator identifies the premises most sensitive to the unavailability of fixed sprinkler systems. It defines and implements measures to limit the risk of loss of fire sectorization in these premises.

Risks associated with the earthquake

[AGR-F] I.– The operator identifies the systems, structures and components requiring reinforcement to ensure that the *hard core* the seismic hazard that it defined in application of the prescription [ECS-ND7] of the appendix to the decisions of January 21, 2014 referred to above.

II.– The licensee implements the modifications allowing the reinforcement of the systems, structures and components identified in I.

III.– For the reactors of the nuclear power plants of Blayais, Bugey, Chinon, Cruas and Tricastin, the licensee is studying the possibilities of reinforcement making it possible to cope with higher seismic hazard levels than those mentioned in I to take into account the uncertainties in determining the extreme hazard and any specific site effects. It defines any changes to be implemented with regard to the challenges for safety and the associated schedule.

Risks associated with internal explosion

[AGR-G] I.– By December 31, 2025, the operator:

- identifies, for explosions liable to lead to the loss of a safety function, the situations for which the availability of the equipment necessary to achieve and maintain the safe state of the reactor is not guaranteed;
- assesses, in a quantified manner, the risks of an explosive atmosphere forming in the reactor building, including in the event of an earthquake, by studying the phenomena likely to occur near the leaks in question;
- defines the possible measures to be implemented with regard to the challenges for safety and the associated schedule.

II.– By December 31, 2022, the operator:

- identifies, regardless of their reliability, the explosion protection arrangements, the failure of which leads to a significant increase in the risk of core meltdown or to the loss of redundant water make-up or pool cooling means fuel storage;
- defines the means to be implemented to reduce the risk of failure of these measures, the operating requirements associated with these means and the associated schedule.

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Studies of accidents affecting the reactor

Dilution transients for the reactors of the Bugey nuclear power plant

[Study-A] No later than December 31, 2021, the licensee assesses, for the reactors of the Bugey nuclear power plant, the time required for the operator to carry out the first intervention to stop the dilution during the following transients:

- dilution by tube rupture of the exchanger of the sealing circuit of the primary pumps (CEPP) in the shutdown for intervention (API) and shutdown for recharging (APR) states;
- dilution by tube rupture of the non-regenerating exchanger (ENR) for the normal shutdown state "AN / RRA" with the primary pumps stopped.

In the event that this period is longer than the conventional period retained in the studies, the operator specifies the new period to be taken into account. It checks that the safety criteria are respected, taking into account this new deadline and the other rules for studying the dimensioning domain. Failing this, by December 31, 2022 at the latest, the operator defines any changes to be implemented with regard to the issues for safety and the associated schedule.

Validity of the critical flux correlation in the presence of laterally deformed assemblies

[Study-B] No later than December 31, 2023, the operator evaluates, by an experimental approach, the validity of the critical flux correlation used at the periphery of the deformed assemblies. On the same date, it defines any changes to be implemented and the associated schedule.

No later than June 30, 2021, the operator shall send a detailed program of the test configurations to be carried out.

Sub-criticality in a situation of total loss of electrical power supplies due to a common cause failure of the LH electrical panels for the reactors of the Bugey nuclear power plant

[Study-C] I.– No later than December 31, 2022, the licensee defines the necessary modifications in order to avoid a return to criticality in a situation of total loss of the electrical power supplies due to a common cause failure of the LH electrical panels for the reactors of the Bugey nuclear power station.

II.– The operator implements the modifications mentioned in I.

Mechanical behavior of fuel assemblies

[Study-D] I.– No later than June 30, 2023, the licensee carries out tests to characterize the buckling limit of the fuel assembly grids.

On the same date, the operator evaluated the mechanical behavior of the assemblies in a situation of accident of loss of primary coolant of the fourth category cumulated with an earthquake occurring concomitantly on the basis of a validated method, integrating assumptions and rules. adapted to the uncertainties and the limits of knowledge of the phenomena involved.

II.– In the event that the value ensuring the absence of buckling is exceeded, the licensee defines the measures to be implemented to ensure control of the reactivity and cooling of the core in this situation and the associated schedule.

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Studies of accidents affecting the fuel storage pool

Diversified back-up and cooling system for the fuel storage pool

[PISC-A] I.– The operator sets up a diversified cooling system for the fuel storage pool and an ultimate water make-up system for this pool, and monitors them during operation.

II.– The fixed parts of the provisions mentioned in I are important elements for the protection of interests for which the operator identifies the associated defined requirements.

III.– The means to ensure, in *hard core situations,* the diversified cooling functions of the fuel storage pool and the ultimate water make-up at this pool are part of the *hard core* and comply with the requirements [ECS-16] of the appendix to the aforementioned decisions of June 26, 2012 and [ECS-ND2] of the appendix to the aforementioned decisions of January 21, 2014.

Studies of accidents affecting the fuel storage pool

[PISC-B] I.– The licensee incorporates, in a dedicated chapter of the safety report, the study rules associated with the safety demonstration of the fuel storage pool as well as the incident and accident situations selected.

This chapter includes the following situations:

- situations of partial or total loss of cooling of the water in the fuel storage pool;
- pipe rupture situations on an isolable section connected to the fuel storage pool.

It implements any necessary modifications.

II.– Before June 30, 2021, the operator defines a schedule for carrying out studies of the following situations, using the rules mentioned in I:

- situations of loss of cooling or draining of the reactor building pool when the two pools are in communication via the transfer tube, including when a fuel assembly is in the transfer tube;
- situations affecting the fuel building pool, which may be induced by the failure, in the event of an earthquake, of equipment not classified as seismic.

At the end of these studies, it defines any changes to be implemented with regard to the challenges for safety and the associated schedule.

[PISC-C] The operator checks that, in the event of an attack, incident or accident, a safe state characterized by the absence of boiling of the fuel storage pool can be achieved and maintained.

It identifies the situations for which such a state cannot be reached with the means valued in the safety demonstration. It defines and implements the measures necessary to improve the prevention of these situations and provides for post-accident management measures to ultimately achieve this safe state without boiling.

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Studies of accidents with core meltdown

Corium stabilization device

[AG-A] I.– The operator implements the technical devices for keeping the reactor pit dry, for spreading the corium on the bottom of the reactor pit and the adjacent room and for passive reflooding of the corium by the water, provided for in response to the prescription [ECS-ND16] of the appendix to the aforementioned decisions of January 21, 2014, aimed at preventing the raft from piercing in the event of partial or total core meltdown.

II.– The operator:

1. send, no later than December 31, 2022, to the Nuclear Safety Authority a detailed draft allowing the thickening of the base of the reactor buildings whose concrete is very siliceous from 2025. This draft includes a radiation protection optimization study for workers;
2. transmits, no later than June 30, 2023, to the Nuclear Safety Authority the conclusions of its program for studying the behavior of slabs in an accident situation with core meltdown based on tests. On the same date, it took a position on the need to thicken the base of the reactor buildings, the concrete of which is very siliceous;
3. thickens the rafts where it is needed.

III.– The operator reinforces the walls between the internal core instrumentation room (RIC) and the sump area at the bottom of the reactor building containment enclosure to prevent any risk caused by their piercing by the corium.

Evacuation of the residual heat outside the containment without venting

[AG-B] I.– The operator implements the ultimate device for evacuating the residual power from the containment (EASu) and has the ultimate cold source (SFu), provided for in response to the third paragraph of III of the prescription [ECS-ND1] of the appendix to the aforementioned decisions of January 21, 2014, allowing the evacuation of the residual heat outside the containment enclosure without opening the ventilation and filtration device.

II.– The operator:

1.defines, no later than December 31, 2022, the means for injecting in the short term into the reactor building a volume of borated water complementary to that contained in the tank of the water treatment and cooling system swimming pools (PTR) in order to ensure the evacuation of the residual heat from the containment during an accident with fuel melting. At the same time, it justifies the feasibility of injecting this volume of additional borated water, taking into account the requirements associated with the means selected and the borated water capacities available;

2. implements any necessary modifications.

III.– The licensee implements the means to deal with an eventual loss of the ultimate device for evacuating the residual power from the containment (EASu), in a post-accident situation.

IV.– The operator installs the necessary means to ensure the detection, collection and reinjection to the reactor building of any leaks from the ultimate device for removing residual power from the containment (EASu), including in a serious accident situation.

[AG-C] I.– The operator protects, with regard to internal attacks, the components of the "wide range" measurement chain of the containment pressure located in the main electrical rooms of the safety route B.

II.– The operator reinforces the ventilation and filtration system of the containment so that it remains operational after an increased safety earthquake (SMS).

Contaminated water management

[AG-D] I.– In order to reduce the risk of groundwater contamination after an accident leading to core meltdown, the operator implements the means to limit the leaks of contaminated water outside the reactor building and the building. fuel.

II.– The operator has the necessary means to reduce the contamination of the water present in the reactor building after an accident leading to the core meltdown and ensures that they are operational on site.

III.– In order to limit the extent and duration of water contamination in the environment in the event of contaminated water leaking outside buildings after an accident leading to core meltdown, the operator is studying the means of limit the dissemination of radioactive substances, through the soil and groundwater, outside the site.

It defines the possible measures to be implemented with regard to the challenges for safety and the associated schedule.

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Hard core

Emergency water supply for steam generators forming part of the hard core

[ND-A] The operator implements the modification of the emergency water supply to the steam generators, provided for in response to the second paragraph of III of the prescription [ECS-ND1] of the appendix to the decisions of January 21, 2014 referred to above, allowing the evacuation of the residual power by the secondary circuit in *hard core situations.*

Back-up means of injection at the joints of the primary pump units

[ND-B] The operator implements a backup injection system at the joints of the primary pump units in order to be able to inject borated water when the primary circuit is at high pressure in *hard core situations.*

This means is part of the *hard core.*

Deployment of the hard core

[ND-C] Without prejudice to the provisions of this decision and the aforementioned decisions of January 21, 2014, the operator implements all the other provisions of the *hard core.*

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Studies of the radiological consequences of accidents

Reduction of the radiological consequences of the tube rupture accident of a fourth category steam generator

[CR-A] I.– No later than June 30, 2022, the licensee lowers the equivalent iodine limit authorized in power transients by the radiochemical specifications of the water in the primary circuit.

II.– The operator is implementing the modifications that he has planned to reduce the radiological consequences of the accident involving the rupture of a fourth category steam generator tube:

1. the modification aimed at increasing the discharge capacity of the turbine bypass unit to atmosphere in order to increase the cooling rate of the primary circuit and to reach the fallback state more quickly;
2. the modification of the high pressure safety injection line for this accident.

Reduction of gas phase iodine releases from contaminated water

[CR-B] The operator is implementing measures to significantly reduce, during a serious accident, the releases of iodine in the gaseous phase from the contaminated water present in the containment of the reactor building as well as in the building. fuel if this water is recirculated.

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Organizational and human factors

Reassessment of organizations, procedures, tools and human behavior

[FOH-A] By December 31, 2024 at the latest, the licensee assesses the capacity of the complex socio-technical systems that constitute its nuclear power plants to cope with the diversity of actual operating situations.

To do this, the licensee sends the Nuclear Safety Authority, no later than December 31, 2021, a study program that includes the impact of the approaches to standardize organizations, procedures, tools and human behavior. This program includes, among the operating activities studied, those contributing to the control of compliance and its maintenance over time, in particular the detection and treatment of deviations.

Ability of operators to carry out actions on the premises

[FOH-B] The licensee verifies the effective capacity of the operators to access the premises and to carry out the control actions required in the demonstration of nuclear safety in the event of an accident, serious accident or attack (for example, accessibility of control units. control and command, ability to carry out actions when wearing personal protective equipment, availability of tools, time required for access).

The operator defines any changes to be implemented and the associated schedule.

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Control of non-radiological risks and inconveniences presented by operation normal

Compliance of installations

[INC-A] I.– No later than June 30, 2021, the licensee sends the nuclear safety authority the compliance control program for its facilities that it will implement during the periodic review of each reactor vis-à-vis disadvantages presented by normal operation and non-radiological risks.

This compliance is assessed with regard to the regulations of December 18, 2006, December 16, 2008 and May 22, 2012 referred to above, the provisions relating to the inconveniences presented by normal operation and non-radiological risks of the aforementioned order of February 7, 2012, the decisions of July 16
2013, April 21, 2015, December 6, 2016, March 23, 2017 and April 6, 2017 referred to above and individual decisions applicable to water withdrawal and consumption, effluent discharge and environmental monitoring.

The operator justifies the scope of the equipment selected in this control program. The scope includes in particular the civil engineering works and the equipment necessary to control the drawbacks presented by installations in normal operation and non-radiological risks, in particular the important elements for the protection allowing the treatment of effluents and the conditioning of the waste. waste.

This control program includes controls *in situ* civil engineering works and equipment and the re-examination of the relevance of current control and maintenance operations with regard to their objectives and the corresponding best available techniques.

II.– The licensee sends the Nuclear Safety Authority a state of compliance of its installation with regard to the results of the checks mentioned in I and the measures it has defined to remedy any discrepancies observed.

Installation impact studies

[INC-B] I.– The operator consolidates the updates to the impact study carried out up to that date in the form provided for by articles R. 122-5 and R. 593-17 of the environment code. In this context, it ensures:

- to take account of changes in the state of knowledge, in particular as regards the assessment of the impacts of discharges from installations and changes in the site's environment;
- describe the impact of installations on the climate and the vulnerability of installations to climate change, in particular with regard to thermal discharges, the management of liquid discharges and the use of water resources.

It can base its study on existing data and analyzes when these are still relevant, in particular when it has assessed certain impacts on the environment during recent modifications.

In the absence of any significant change identified, the operator can repeat the existing elements on knowledge of the environment that must appear in the description of the relevant aspects of the state of the environment.

II.– The licensee specifies the improvements contributing to the reduction of the impacts of its installations on the environment that it foresees with regard to the conclusions of the impact study mentioned in I and the best available techniques, as well as the timetable associated implementation.

III.– No later than December 31, 2023, the licensee submits a study presenting the cumulative impact on the Rhône and on the Loire of the nuclear power plants located on these rivers.

Annex 2

to decision n ° 2021-DC-0706 of the Nuclear Safety Authority of 23 February 2021 fixing for the company Électricité de France (EDF) the requirements applicable to the reactors of nuclear power plants in Blayais (BNI n ° 86 and n ° 110), du Bugey (BNI n ° 78 and n ° 89), Chinon (INB n ° 107 and n ° 132), of Cruas (INB n ° 111 and n ° 112), of Dampierre-en-Burly (INB n ° 84 and n ° 85), of Gravelines (INB n ° 96, n ° 97 and n ° 122), of Saint-Laurent-des-Eaux (INB n ° 100) and of Tricastin (INB n ° 87 and n ° 88) in view of the conclusions of the generic phase of their fourth periodic review

This annex sets the specific deadlines for each reactor for the requirements set out in annex 1.

Note: for information, the grayed deadlines correspond to the deadline for submitting the review conclusion report.

Blayais nuclear power plant

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

Bugey nuclear power plant

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

Chinon nuclear power plant

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

Cruas nuclear power plant

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

Dampierre-en-Burly nuclear power plant

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

Gravelines nuclear power plant

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

Saint-Laurent-des-Eaux nuclear power plant

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

Tricastin nuclear power plant

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