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Our reference: NIL09B0001
Your reference:

05 October 2009

Chief Executive Officer
Necsa
P O Box 582
PRETORIA
0001

FOR THE ATTENTION OF DR RM ADAM

Dear Dr Adam

NUCLEAR INSTALLATION LICENCE NIL-09 (VARIATION 0)

Please find enclosed one controlled copy of Nuclear Installation Licence No. NIL-09 (Variation 0), being the nuclear authorisation issued to Necsa for the operation of the UMET facility in Building P-2600. This document must be controlled in accordance with the Necsa arrangements for controlled documents.

The provisions of Nuclear License NL27 (Variation 25) are no longer applicable to the UMET facility in Building P-2600.

The issue of Nuclear Installation Licence No. NIL-09 (Variation 0) –

(i) Gives effect to the Minister's ruling that separate authorisations be issued for the nuclear installations on the Pelindaba site.
(ii) Provides a description of the installation, a clear definition of the scope of actions that may be undertaken by the installation and the associated NNR specified requirements.

The issue of this nuclear authorisation does not relieve Necsa of any obligations under any other legislation.

Yours faithfully

GA Clapisson
ACTING CHIEF EXECUTIVE OFFICER

NUCLEAR INSTALLATION LICENCE No. NIL-09 (Variation 0)

Nuclear Installation Licence No. NIL-09 (Variation 0) issued in terms of the provisions of Section 23 of the National Nuclear Regulator Act, Act 47 of 1999 (hereinafter referred to as the Act)

to

THE SOUTH AFRICAN NUCLEAR ENERGY CORPORATION (Necsa)
(hereinafter referred to as the Licensee)

for

the operation of **UMET in Building P-2600** on the farm Weldaba 567 JQ (formerly Welgegund 491 JQ), in the magisterial district of Brits in the North West Province, known as the Pelindaba site. The site referred to in this licence refers to the defined portion of the Pelindaba site on which UMET is constructed (see Figure 1).

The Nuclear Installation Licence is not transferable and is effective from the date of issue, subject to adherence with –

(i) the Conditions of Authorisation in PART A; and
(ii) the Specified NNR Requirements in PART B.

Issued at Centurion on this 8th day of October 2009

ACTING CHIEF EXECUTIVE OFFICER

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PART A: CONDITIONS OF AUTHORISATION

1. General

a. In these conditions any reference to an agreement, approval, directive, specification, notification, process or any formal communication between the NNR and the licensee, and vice versa, shall be deemed to be a reference to a written document.

b. In these conditions any reference to approved processes and or procedures shall be deemed to be licensee processes and or procedures.

c. In these conditions any reference to NNR approved processes and or procedures shall be deemed to be licensee processes and or procedures that have been reviewed and approved by the NNR.

d. The licensee must ensure that once approved no alteration or amendment is made to the NNR approved processes and or procedures unless the NNR has approved the said alteration or amendment.

e. Where in these conditions, the NNR requires any matter to be approved or to be carried out only with its consent or to be carried out as it directs, the NNR may –
   i. from time to time modify, revise or withdraw, either wholly or in part, any such approval, directive or consent;
   ii. approve, either wholly or in part, any modification or revision or any proposed modification or revision to any matter for the period being approved.

f. The English text of the licence is the official text of the licence.

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2. Facility Description

Facility Description: UMET: P-2600

a. UMET: P-2600 is a single floor pre-fabricated steel construction with a double wall 8 mm thick asbestos cement sheeting. The cavity is filled with 45 mm thick glass fibre insulation material. The external walls of Area 4007 are 260 mm thick plastered brick. The roof is made of roof sheeting with a conventional ceiling.

b. UMET: P-2600 consists of an office area and a plant area. The plant area consists of a laboratory, three vaults, a rolling bay, a melt and cast area, an acid cleaning and shavings handling area, a workshop, electrical and ventilation plant rooms and, several storage rooms.

3. Scope of Actions that may be undertaken in UMET (Building P-2600)

a. UMET is authorized for the following activities –

i. Storage of –
   1. Depleted and natural Uranium metal in approved areas;
   2. Manufactured Depleted Uranium (DU) shielding containers and transfer of these containers to other authorised facilities;
   3. waste drums containing compressible waste.

ii. Melting and casting of Uranium metal;

iii. Preparation of graphite components for Melting and Casting of Uranium metal;

iv. Manufacturing of Shielding containers by machining of Uranium metal as required for producing client specified products;

v. Transfer of manufactured shielding containers to other authorised facilities;

vi. Re-melting and casting of shavings and cuttings, after chemical cleaning and drying, into a solid ingots for feed material;

vii. The handling, processing and storage of radioactive waste and the transfer thereof to other authorised facilities.

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4. Demarcation of Site Boundary, Site Plans, Designs and Specifications

a. The licensee must maintain a plan of the site (hereinafter called the site plan) showing the location of the boundary of the site and every building, plant or facility on the site.

b. The licensee must demarcate the boundaries of the site by fences or other appropriate means and all such fences, or other means used for this purpose, must be properly maintained.

c. Prior to making any change to the site, which impacts or has the potential to impact on health, safety, or the environment as contemplated in the Act,

ii. as required by any other condition attached to this licence; or
iii. as the licensee considers necessary.

13. Emergency Planning and Preparedness

a. The licensee must implement NNR approved processes related to preparedness for and response to any event, (incident, accident, etc) or other emergency arising on the site and their associated impacts.

b. The licensee must ensure that such processes include procedures to ensure that all persons, in the employ of the licensee, who have duties in connection with such processes are properly trained and instructed in –
   i. the performance of the processes;
   ii. the use of any equipment that may be required; and
   iii. the precautions to be observed.

c. Where such processes require the assistance or cooperation of, or it is expedient to make use of the services of any person, local authority or any other body; the licensee must ensure that such persons, local authority or other body are consulted in the periodic review and update of such processes.

d. The licensee must ensure that all such processes are exercised and tested at such intervals and at such times and to such extent as the NNR may specify or, where the NNR has not so specified, as the licensee considers necessary to ensure their continued viability.

14. Environmental Protection

a. The licensee must implement NNR approved processes for the protection of public health and the environment arising from the nuclear installation's authorised activities.

b. The licensee must ensure that no radioactive effluent release is made from the site, except in accordance with procedures and processes approved by the NNR.

c. The licensee must implement NNR approved processes and procedures for environmental monitoring and surveillance.

15. Duly Authorised and Suitably Qualified and Experienced Persons

a. The licensee must implement NNR approved processes and procedures for ensuring that only suitably qualified and experienced persons perform any

duties, which may affect the safety of operations on the site, or any duties assigned by or under these conditions of licence.

b. Such processes and procedures must make provision for the appointment, as appropriate, of duly authorised persons to control and supervise operations, which may affect plant or facility safety.

16. Safety Committee

a. The licensee must implement processes and procedures relating to safety committee(s) to oversee and manage its safety responsibilities and to which it refers for consideration and advice –
   i. matters required by or under this licence;
   ii. safety policies, procedures, processes or documents required by these conditions of licence or as the NNR may specify and any subsequent alteration or amendment to said processes or documents;
   iii. any matter affecting safety on or off the site which the NNR may specify; and
   iv. any other matter, which the licensee considers should be referred to a safety committee.

b. The terms of reference of any such safety committee must be submitted to the NNR.

c. The licensee must ensure that the members of any such committee are suitably qualified and experienced, so as to enable said committee to consider any matter likely to be referred to it and to advise the licensee authoritatively and, so far as practicable, independently.

d. The licensee must ensure that a safety committee shall consider or advise only during the course of a properly constituted meeting of that committee. Minutes must be kept of all such meetings

17. Safety Documentation

a. The licensee must implement NNR approved processes and procedures for the production and assessment of safety cases consisting of documentation to justify safety during the following lifecycle phases of the installation –
   i. Siting;
   ii. Design;
   iii. Manufacture of component parts;
   iv. Construction;
   v. Commissioning;
   vi. Operation;
   vii. Termination of operation;

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viii. Decontamination; and
ix. Decommissioning.

b. The safety case must include a risk assessment and demonstration of compliance with the Regulations on Safety Standards and Regulatory Practices as well as any other requirements and guidance prescribed by the NNR.

c. The licensee must establish and implement processes for the periodic and systematic review and reassessment of safety cases.

d. The licensee must if so directed by the NNR, carry out a review and reassessment of safety and submit a report of said review and reassessment to the NNR at such intervals, within such period and for such matters or operations as may be specified in the directive.

18. Quality and Safety Management

a. Quality and Safety Management processes and procedures must be established, implemented and maintained in respect of all matters that may affect safety, in order to ensure compliance with the conditions of this licence.

b. The licensee must comply with all NNR approved or NNR accepted documents contained in the Necsa Process Based Licensing (PBL) Manual.

c. The licensee must submit to the NNR such copies of records or documents made in connection with the aforementioned processes and procedures as the NNR may specify.

19. Modification to Design of Existing Plant or Facility

a. The licensee must comply with NNR approved processes and procedures relating to control of modification to the design of existing plant, facility or system design, including modifications that may be of a temporary nature.

b. The aforesaid processes must provide for the classification of modifications according to their safety significance.

c. Where appropriate, modifications must be divided into stages and where the NNR has so specified the licensee must not commence nor thereafter proceed from one stage to the next of the modification, without the prior approval of the NNR.

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d. The processes must include a requirement for the provision of adequate documentation to justify the safety of the proposed modification and shall, where appropriate, provide for the submission of such documentation to the NNR.

20. Construction and Commissioning of Plant or Process

a. The licensee must implement NNR approved processes and procedures relating to the construction and commissioning of any plant, facility or process.

b. Where appropriate, construction and commissioning of the plant or process may be divided into stages. If so specified by the NNR, the licensee must not commence with any stage nor proceed from one stage of the construction or commissioning to the next without the prior approval of the NNR.

21. Limits and Conditions on Operations

a. The licensee must, in respect of any operation that may affect safety, produce a safety case to demonstrate the safety of the operation and identify the limits and conditions necessary in the interest of safety. The limits and conditions of operation must be submitted to the NNR for approval.

b. The licensee must ensure that operations are controlled and carried out in compliance with NNR approved limits and conditions on operations at all times.

c. Where the person appointed in terms of paragraph 15 (a) identifies any matter indicating that the safety of any operation or the safe condition of any plant is compromised, that person must bring it to the attention of the relevant facility management, who must forthwith take appropriate action to ensure that the matter is appropriately notified, recorded, investigated and reported to the NNR.

d. The NNR may in the interests of safety, at any time revoke, amend or impose any limiting condition on operations.

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22. Examination, Inspection, Maintenance and Testing

a. The licensee must implement NNR approved processes for the regular, periodic and systematic examination, inspection, maintenance and testing of all plant, systems, structures and components, including software.

b. The aforesaid processes must provide for the preparation of a plant maintenance schedule for each plant or facility. The licensee must submit to the NNR for its approval, such part or parts of any plant maintenance schedule as the NNR may specify.

c. The licensee must ensure that a full and accurate report of every examination, inspection, maintenance or test, of any part of a plant, system, structure or component, indicating the date thereof and signed by a suitably qualified and experienced person appointed by the licensee, is made.

d. The licensee must ensure, in the interests of safety, that examination, inspection, maintenance and test of a plant or any part thereof is carried out –
   i. only by suitably qualified and experienced persons;
   ii. in accordance with written procedures;
   iii. within the intervals specified in the plant maintenance schedule; and
   iv. under the control and general supervision of a suitably qualified and experienced person appointed by the licensee for that purpose.

e. When any examination, inspection, maintenance or test of any part of a plant reveals any matter indicating that the safe operation or safe condition of that plant may be affected, the suitably qualified and experienced person appointed to control or supervise any such examination, inspection, maintenance or test shall forthwith bring it to the attention of the relevant facility management who shall take appropriate action and ensure the matter is then notified, recorded, investigated and reported in accordance with approved processes.

23. Decommissioning

a. The licensee must implement NNR approved processes for the decommissioning of facilities or any part thereof on the site.

b. The Licensee must submit for approval a decommissioning plan, as early as possible in the life cycle of the activity or facility. The plan must be revisited and updated as necessary.

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c. A detailed decommissioning plan must be submitted to the NNR for approval prior to the commencement of decommissioning activities.

d. It must be demonstrated to the NNR that sufficient resources will be available from the time of cessation of operations until termination of the period of responsibility.

e. Where appropriate decommissioning may be divided into stages. If so specified by the NNR, the licensee may not commence with nor proceed from one stage of the decommissioning to the next without the prior approval of the NNR.

f. The Licensee must establish and maintain a list of all contaminated areas on the site, which will require decontamination in the future.

24. Organizational Change

a. The Licensee must implement NNR approved processes to control any change to its organizational structure or resources that may have a bearing on health, safety and the environment as contemplated in the Act.

b. The processes must provide for the classification of changes to the organizational structure or resources according to their safety significance.

c. The processes must include a requirement for the provision of documentation to justify the safety of the proposed change and shall where appropriate provide for the submission of such documentation to the NNR.

25. Financial Security

a. The Licensee must annually provide proof to the NNR that any claim for compensation to an amount contemplated in Section 30(2) of the Act can be met.

26. Public Safety Information Forum

a. In order to inform the persons living in the municipal area in respect of which an emergency plan has been established, in terms of Section 38(1) of the Act, on nuclear and radiation safety matters, the Licensee must establish a Public Safety Information Forum as prescribed.

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27. Inspection Programme

a. Pursuant to the provisions of Section 26(2) of the Act, the Licensee must implement an inspection programme to ensure compliance with all conditions of the nuclear installation licence.

28. Display of the Nuclear Installation Licence

a. To ensure public access to the conditions specified in this licence, the Licensee must at all times display copies of this Nuclear Installation Licence at the entrance to the installation in the following languages – English, SeTshwana and Afrikaans.

b. The Licensee must provide to the NNR documented proof that the translations into SeTshwana and Afrikaans are true and accurate translations of the original English text.

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PART B: SPECIFIED NNR REQUIREMENTS for UMET

B-1 The approved Operational Technical Specifications (OTS) for UMET is document UM-OTS-2401 (Rev 04): "*Operating technical specifications for Building P2600*".

B-2 The licensee must comply with the requirements, as per the NNR requirements documents, listed in the table below –

Document number	Description
RD-0014 (Rev 0)	Emergency Preparedness and Response Requirements for Nuclear Installations
RD-0016 (Rev 0)	Requirements for authorisation Submissions Involving Computer Software and Evaluation Models for Safety Calculations
RD-0024 (Rev 0)	Requirements on Risk Assessment and Compliance with Safety Criteria for Nuclear Installations
RD-0026 (Rev 0)	Decommissioning of Nuclear Facilities
RD-0034 (Rev 0)	Quality and Safety Management Requirements for Nuclear Installations
LD-1079 (Rev 1)	Requirements in Respect of Licence Change Requests to the National Nuclear Regulator

B-3 Shavings and cuttings must be immersed in cutting fluid when stored.

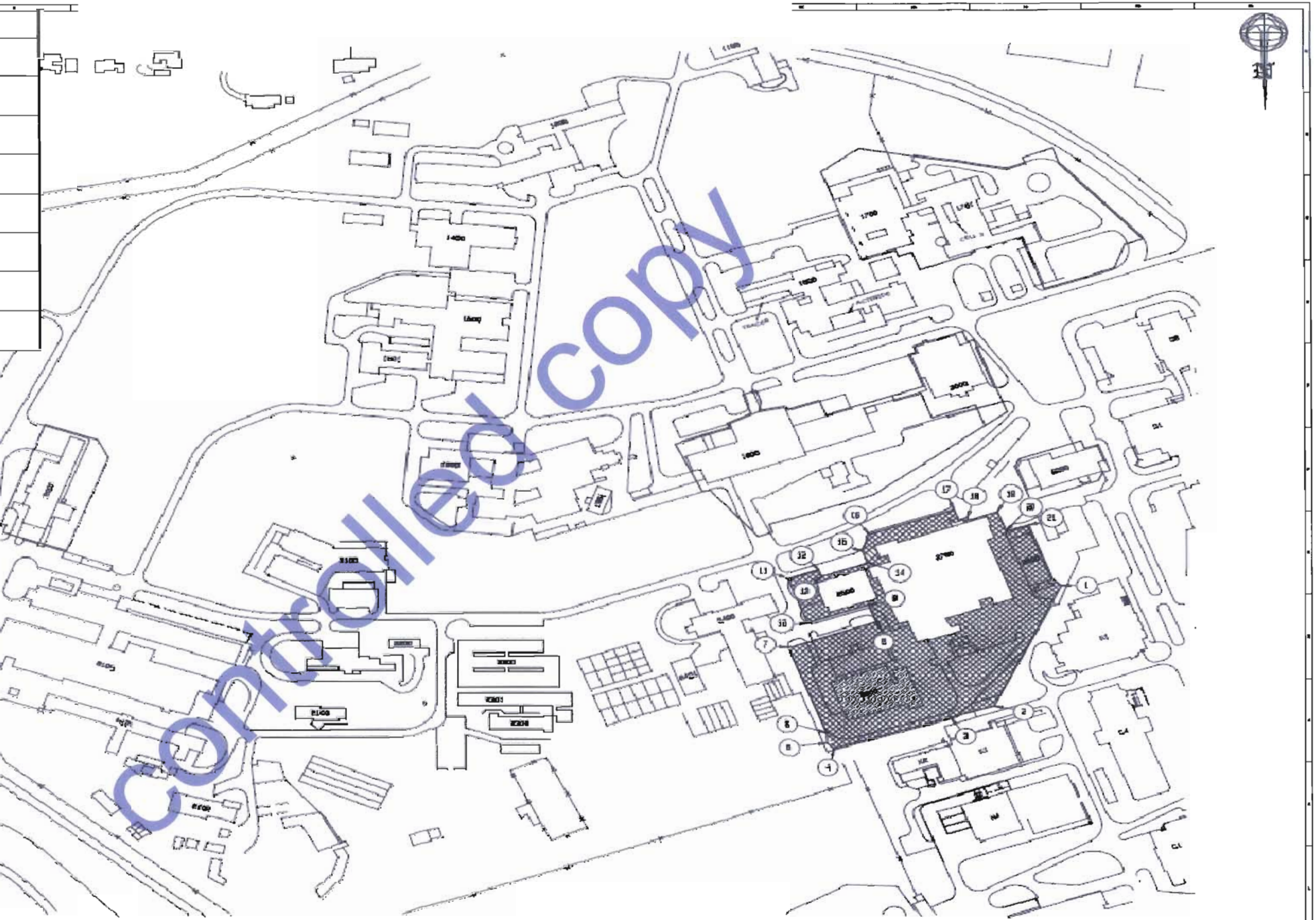
B-4 Uranium metal from Naschem may be stored in the vault of room 2006 in accordance with document UM-PLN-0010 (Rev 0): "*Storage of uranium metal in Building P-2600*".

B-5 Uranium metal from SAA may be stored in Building P-2600 room 2005 in accordance with the requirements specified in LCR A736 and the conditions specified in AB2764.

B-6 The facility may only work with natural and depleted uranium.

B-7 The maximum source term for natural and depleted uranium is 1.68E+12Bq.

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