culminating project (*e.g.,* musical composition) and (2) is not primarily intended as a degree for the practice of a profession. The most common research doctorate degree is the Ph.D. Recipients of professional doctoral degrees, such as MD, DDS, JD, DPharm, and PsyD, are not included in the SED. The 2026 and 2027 SED are expected to include about 630 separately reporting schools with eligible research doctoral programs from about 460 doctorate-granting institutions. Based on the historical trend and the disruptive impacts of the COVID 19 pandemic that suppressed the enrollment of research doctoral programs since 2020, NCSES expects a stable turnout of research doctorates for the next few years with a nominal increase from the 2025 cycle, estimating that approximately 58,000 individuals will receive a research doctorate from U.S. institutions in each of the 2026 and 2027 cycle.

In addition to the questionnaire for individuals receiving their research doctorates, the SED needs to collect administrative data such as graduation lists from participating academic institutions. The Institutional Coordinator at the institution helps distribute the Web survey link, track survey completions, and submit information to the SED survey contractor.

Estimate of Burden: An average overall response rate of 91.5% of the persons who earned a research doctorate from a U.S. institution was obtained in the academic years 2021, 2022, and 2023. Using the past response rate, the number of SED respondents is estimated to be 53,070 (58,000 doctorate recipients × 0.915 response rate) in each of the 2026 and 2027 cycles.

Based on the average Web survey completion time for the 2023 SED (19.5 minutes), NCSES estimates that, on average, 20 minutes per respondent will be required to complete the 2026 or 2027 SED Web survey. The annual respondent burden for completing the SED is therefore estimated at 17,690 hours each in 2026 and 2027 (based on 53,070 respondents × 20 minutes).

Based on focus groups conducted with Institutional Coordinators, it is estimated that the SED takes no more than 1% of the Institutional Coordinator's time over the course of a year, which computes to 20 hours per year per Institutional Coordinator (40 hours per week × 50 weeks per year × .01). With about 650 schools expected to participate in the SED in 2026 and 2027, the estimated annual burden to Institutional Coordinators of administering the SED is 13,000 hours per survey cycle.

Therefore, the total information burden for the SED is estimated to be 30,690 (17,690 + 13,000) hours each in the 2026 and 2027 survey cycle. NCSES estimates that the average annual burden for the 2026 and 2027 survey cycles over the course of the three-year OMB clearance period will be no more than 20,460 hours [(30,690 hours + 30,690 hours)/3 years].

Comments: Comments are invited on (a) whether the proposed collection of information is necessary for the proper performance of the functions of the NSF, including whether the information shall have practical utility; (b) the accuracy of the NSF's estimate of the burden of the proposed collection of information; (c) ways to enhance the quality, use, and clarity of the information on respondents, including through the use of automated collection techniques or other forms of information technology; and (d) ways to minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Dated: November 18, 2024.

Suzanne H. Plimpton,

Reports Clearance Officer, National Science Foundation.

[FR Doc. 2024–27334 Filed 11–20–24; 8:45 am]

BILLING CODE 7555–01–P

NATIONAL SCIENCE FOUNDATION

Request for Information (RFI) on Science Research Goals/Objectives Affecting Proposed U.S. Antarctic Science Monitoring And Reliable Telecommunications (SMART) Cable and Route Design

AGENCY: U.S. National Science Foundation.

ACTION: Request for public comment; extension of comment period.

SUMMARY: On August 28, 2024, the U.S. National Science Foundation (NSF) published in the **Federal Register** a document entitled, ''Request for Information (RFI) on Science Research Goals/Objectives Affecting Proposed U.S. Antarctic Science Monitoring and Reliable Telecommunications (SMART) Cable and Route Design.'' In response to delays to widely publicize the RFI within the science research community to enhance public response and provide sufficient time to adequately consider and respond to the RFI, NSF has determined that an extension of the comment period until Wednesday, January 15 at 11:59 p.m. (eastern), is appropriate.

DATES: The end of the comment period for the document entitled ''Request for Information'' published on August 28, 2024 (89 FR 68934), is extended from November 5, 2024, until January 15, 2025.

ADDRESSES: To respond to this Request for Information, please use the official submission form available at:

- *Electronic On-line Submission: https://www.surveymonkey.com/r/subseacable.*

Respondents only need to provide feedback on one or more questions of interest or relevance to them. Each question is voluntary and optional. Further announcements and information may be found on the NSF web page: *https://www.nsf.gov/geo/opp/ail/subsea_cable/.*

FOR FURTHER INFORMATION CONTACT: For further information, please direct questions to Patrick D. Smith through email: *AntarcticSubseaCable-RFI@nsf.gov,* phone: *703–292–7455, or mail: 2415 Eisenhower Avenue, Suite W7251, Alexandria, VA 22314, USA.*

SUPPLEMENTARY INFORMATION:

Introduction

Over 500 subsea fiber optic telecommunications cables, including both installed and planned cables, cover nearly all ocean regions including multiple high Arctic cables. NSF is investigating the implementation of a modern subsea fiber optic telecommunications cable connecting the largest U.S. Antarctic Program (*https://www.usap.gov/*) research facility, McMurdo Station (77°50′47″ S,166°40′06″ E) (*https://www.usap.gov/videoclipsandmaps/mcmwebcam.cfm?t=1*), with either New Zealand or Australia. Although the main scope of the installation is to provide advanced high-speed, low delay telecommunications, this cable will contain additional point sensors (*e.g.,* SMART—Science Monitoring And Reliable Telecommunications) and/or distributed sensing infrastructure, enabling for the first time myriad investigations across a broad range of scientific disciplines.

The NSF Directorates for Geosciences (GEO), Computer and Information Science and Engineering (CISE), and Technology, Innovation, and Partnerships (TIP) have identified the potential subsea cable as an opportunity for transformational changes in the conduct of science, vast improvements in telecommunications capability supporting Antarctica, and innovative public-private partnerships linking science and technology.

Additionally, the cable would have the ability to accommodate additional, multiple forms of distributed fiber optic sensing that are advancing rapidly in technology maturity (*e.g.,* Distributed Acoustic Sensing, Distributed Temperature Sensing, State of Polarization, etc.). Preliminary cable routes have been established using standard subsea cable industry best practices that avoid areas posing high geophysical risk, as well as initial feedback from the scientific community via a virtual workshop in 2021, producing a broad corridor where opportunities exist to adjust the final route to best align with Earth science areas of high science research interest.

Further, science research supported by the cable sensors is of societal relevance on a global scale for a number of reasons, such as (1) filling significant knowledge gaps of key global ocean processes and trends for improved understanding and monitoring climate change, including ocean heat transport, CO_2 sequestration, and sea level rise; (2) regional seismic monitoring and early warning of potential tsunami seismic events; (3) global measurements of geophysical Earth structure; and (4) developing the technological capabilities to enhance other global telecommunications infrastructure for scientific research and human benefit.

Science Workshop

In late June 2021, the NSF Directorate for Geosciences, Office of Polar Programs (GEO/OPP) (*https://www.nsf.gov/div/index.jsp?div=OPP*) and Directorate for Computer Information Science and Engineering, Office of Advanced Cyberinfrastructure (CISE/OAC) (*https://new.nsf.gov/cise/oac*), jointly funded a research community-led science workshop (*https://www.pgc.umn.edu/workshops/antarctic-cable/*) to review the scientific benefits of a sensor-enabled subsea fiber cable. The Workshop endorsed the cable concept and noted that existing technology and cable systems make it feasible. The Workshop concluded that the proposed activity would benefit Antarctic science research by both increasing telecommunications capacity and including new science sensors in the cable design.

The Workshop's Executive Summary captured four primary findings:

Finding 1: Existing and future Antarctic research would be significantly enhanced if bandwidth limitations were eliminated through the availability of a modern submarine cable system.

Finding 2: A new submarine cable could be constructed with embedded instrumentation (a Scientific Monitoring And Reliable Telecommunications, or SMART, cable) that would itself enable meaningful new research and understanding of the region.

Finding 3: Robust bandwidth for interpersonal connectivity for scientists and staff, if thoughtfully approached, could be transformative for research and work functions, participation in Antarctic science, education, engagement, and community wellbeing.

Finding 4: Construction of a new SMART cable that provides essentially unlimited bandwidth to McMurdo is feasible and could also serve as the platform to extend connectivity to deep-field research sites as well as critical research programs at Amundsen-Scott South Pole Station. This level of connectivity can transform the science and research platforms for future generations.

Feasibility Study

In response to the 2021 Science Workshop, NSF contracted a comprehensive preliminary concept/feasibility study (known as a Desktop Study, or DTS *https://gbs1.com/desktop-studies/*), incorporating the unique attributes of implementing a sensor-enabled cable to Antarctica. The public version of the McMurdo Cable DTS (*https://www.nsf.gov/geo/opp/documents/NSF_Public%20Release%20DTS_Final.pdf*) was released in October 2023. NSF also provided a summary and news release (*https://www.nsf.gov/news/news_summ.jsp?cntn_id=308774&org=OPP*).

The DTS addresses two proposed routes for comparison: (1) McMurdo Station to Sydney, Australia and (2) McMurdo Station to Invercargill, New Zealand. It includes brief assessments of optional extensions from the main cable routes to Macquarie Island for potential interconnection to the Australian research station located there and to nearby international research stations located in the Western Ross Sea/Terra Nova Bay area. More details on the proposed routes including landing sites and relevant diagrams can be found in section 2 of the DTS.

The study Executive Summary summarizes the key study results in a comparison of the two routes considered.

Both routes were considered technically feasible with the following observations:

(1) The NZ route is 1,500 km shorter and thus considerably more economical.

(2) The Australian route has additional geophysical risk to the cable arising from a crossing of the seismically active Macquarie Ridge Complex to the north of Macquarie Island.

(3) The New Zealand route covers more regions of science interest as indicated by science researcher input to the study. Seismologist interests obtained during the study proposed cable branching units located at 60°S and 50°S for future sea bottom seismometer instruments tapping the cable's power and communications.

(4) The risk from ice scour appears reasonable based upon detailed near-shore bathymetry—the Antarctic SMART Cable landing risk mitigation uses standard subsea cable landing techniques called Horizontal Directional Drilling (HDD). Bathymetry and iceberg keel depth studies pertaining to the cable route transit across the Ross Sea continental shelf yield a similar low risk assessment.

(5) Environmental assessments and permitting will be a significant component of future work, as is the case with all subsea cable projects, and will include the Antarctic Treaty Committee on Environmental Protection protocols. Coordination with the Committee for the Conservation of Antarctic Marine Living Resources (CCAMLR) will be needed as the proposed cable route transits the CCAMLR governed Marine Protected Areas in the Ross Sea region.

Subsea Cable Industry Considerations

A subsea cable installation represents a substantial economic investment. As such, modern subsea telecommunications cables are designed with a 25-year or greater lifetime and thus are designed for high reliability and low maintenance. The introduction of SMART sensors into commercial subsea telecommunications cables is a new phenomenon, with the Government of Portugal-sponsored Atlantic CAM cable (*https://www.infraestruturasdeportugal.pt/pt-pt/ip-e-asn-assinam-contrato-para-construcao-de-novo-anel-cam*) and the TAMTAM cable connecting New Caledonia and Vanuatu (*https://www.soest.hawaii.edu/soestwp/announce/news/contract-signed-vanuatu-new-caledonia/*) being the first examples. The introduction of sensors into a standard telecommunications cable meeting scientific requirements and inherent cable design life/reliability requirements represents both a new market opportunity and a new technical frontier for industry that will influence the design and adoption of SMART sensors. Point sensors also complement and enhance commercially available cable sensing technologies such as distributed fiber sensing.

Resources

NSF, United States Antarctic Program Portal; *https://www.usap.gov/*
NSF, Office of Polar Programs; *https://www.nsf.gov/div/index.jsp?div=OPP*
NSF, Office of Advanced Cyberinfrastructure; *https://new.nsf.gov/cise/oac*
NSF, McMurdo Station Webcams; *https://www.usap.gov/videoclipsandmaps/mcmwebcam.cfm*
Joint Task Force on Science Monitoring And Reliable Telecommunications, SMART Cables; *https://www.smartcables.org/*
Neff, P.D., Andreasen, J.R., Roop, H.A., Pundsack, J., Howe, B., Jacobs, G., Lassner, D., Yoshimi, G., and Timm, K. (2021). 2021 Antarctic Subsea Cable Workshop Report: High-Speed Connectivity Needs to Advance US Antarctic Science. October 1, 2021. University of Minnesota, Saint Paul, MN, USA; *https://www.pgc.umn.edu/workshops/antarctic-cable/*
ICPC, Minimum Technical Requirements for a Desktop Study (6 March 2012), Recommendation No. 9, at pp. 4–8; *www.iscpc.org/publications/recommendations*
NSF, Connecting the Last Continent: New desktop study on Antarctica's potential subsea telecommunications cable, with link to study, 27 December 2023; *https://www.nsf.gov/news/news_summ.jsp?cntn_id=308774&org=OPP*
Infraestruturas de Portugal, IP and ASN sign contract for the construction of a New CAM Ring, 13 March 2024; *https://www.infraestruturasdeportugal.pt/pt-pt/ip-e-asn-assinam-contrato-para-construcao-de-novo-anel-cam*
University of Hawai'i, Contract signed for world's first SMART subsea cable, connecting Vanuatu, New Caledonia, School of Ocean and Earth Science and Technology, 29 February 2024; *https://www.soest.hawaii.edu/soestwp/announce/news/contract-signed-vanuatu-new-caledonia/*

Definition of Terms/References

2021 Antarctic Subsea Cable Workshop: *https://www.pgc.umn.edu/workshops/antarctic-cable/*
Branching Unit (BU): *https://en.wikipedia.org/wiki/Submarine_branching_unit*
Ocean Bottom Pressure A–0–A Technology: *https://oceanobservatories.org/pi-instrument/a-0-a-calibrated-pressure-instrument/#:~:text=The%20A%2D0%2DA%20method,pressure%20inside%20the%20instrument%20housing.*
Repeater: S. Lentz and B. Howe, ''Scientific Monitoring And Reliable Telecommunications (SMART) Cable Systems: Integration of Sensors into Telecommunications Repeaters,'' 2018 OCEANS—MTS/IEEE Kobe Techno-Oceans (OTO), Kobe, Japan, 2018, pp. 1–7, doi: 10.1109/OCEANSKOBE.2018.8558862. (pg. 2)*https://www.researchgate.net/publication/329618575_Scientific_Monitoring_And_Reliable_Telecommunications_SMART_Cable_Systems_Integration_of_Sensors_into_Telecommunications_Repeaters*
SMART Cables: *https://www.smartcables.org/smart*
Technology Readiness Level (TRL):*https://en.wikipedia.org/wiki/Technology_readiness_level*

Information Requested

Through this notice, NSF seeks information from the public to evolve the development of the Antarctic SMART Cable. NSF requests information regarding the subsea cable route that both minimizes the risk to the cable and maximizes science research potential, the range of potential science sensors to include, as well as their geographic distribution, the locations of powered cable branching units for future sensor cable build-out or undersea observatory-style point sensor arrays, concepts for the incorporation of existing or promising distributed fiber sensing techniques, and suggested paths to catalyze the necessary technology to develop such a cable system. Additionally, NSF seeks information relevant to partnership opportunities with the public (U.S., international) and private (academia, for-profit and non-profit) sectors that will facilitate the conceptualization, development, deployment and sustainment of the cable system and related scientific infrastructure.

The information requested here will be used to inform the proposed Antarctic SMART Cable project via the NSF Major Research Equipment Facilities and Construction (MREFC) program that funds the development of facility infrastructure. MREFC projects are funded via a separate appropriation intended for large capital-intensive investments, distinct from the NSF appropriations funding research and related activities.

Responses submitted via Email and Letter Mail are requested to follow the Electronic On-line Submission data capture questions and format for ease in analyzing responses. These responses may address one or as many topics as desired from the enumerated list provided in this RFI, noting the corresponding number of the topic(s) to which the response pertains. Written submissions must be type-written and not exceed 3 pages (exclusive of cover page and accompanying graphics) in 11-point or larger font, single spacing and with a page number provided on each page.

Comments containing references, studies, research, and other empirical data that are not widely published or widely available should include copies or electronic links of the referenced materials; these materials, as well as a list of references, do not count toward the 3-page limit. No business proprietary information, copyrighted information, or personally identifiable information (aside from optional information requested below) should be submitted in response to this RFI. Comments submitted in response to this RFI will be used internally at NSF and may be shared with other Federal agencies and NSF contractors assigned to process the responses.

Responders are asked to answer one or more of the following questions in responses to the RFI. There are no known risks to participating, and participation is voluntary. Unless provided by you, no identifying information will be collected; therefore, all responses will remain confidential, anonymous, and reported in the aggregate. While there is no sensitive content, you may skip a question at any time.

Demographic Questions

1. In which sector do you currently work?

(a) Academia
(b) Private or publicly traded company
(c) Government agency/public sector
(d) Non-governmental organization/non-profit
(e) Venture capital/private equity
(f) Other (Please specify)

2. Please select up to three (3) areas of expertise/interest:

(a) Physical Oceanography
(b) Cryosphere
(c) Biochemistry
(d) Science Education
(e) Geodesy
(f) Hydrology
(g) Climate Change Research
(h) Marine Geology/Geophysics
(i) Natural Hazards
(j) Solid Earth Geophysics
(k) Subsea Fiber Optic Cable Systems
(l) Sensor/Instrumentation Development
(m) Data Management
(n) Distributed Fiber Sensing
(o) Other (Please specify)

3. For how long have you been working in your current field(s)?

(a) Less than five years
(b) Five to less than ten years
(c) Ten to less than twenty years
(d) Twenty years or more
(e) Prefer not to answer

SMART Cables and Antarctic SMART Cable Science Objectives

4. How familiar are you with the overall SMART Cable concept?

Very familiar
Familiar

Somewhat familiar
Not very familiar
Not at all familiar

5. Prior to the NSF **Federal Register** Notice and this Electronic On-Line Submission, how familiar were you with the nascent Antarctic SMART Cable project?

Very familiar
Familiar
Somewhat familiar
Not very familiar
Not at all familiar

6. Which of the following major research areas do you see the observational capability of the cable supporting? Select all that apply.

Climate Change Research
Acoustic Monitoring
Long-Term Global Ocean Observations (general)
Seismology Research
Earthquake/Tsunami Monitoring
Sea Level Research
Deep Ocean Circulation Research
Southern Ocean Research
Other (Please specify)
None of the above

7. If you selected ''NONE OF THE ABOVE'' in the previous question, please elaborate here:

Current and Future Sensors

The initial SMART Cable sensor concept incorporates three basic measurements: Ocean Bottom Pressure, Ocean Bottom Temperature, and Seismic Ground Motion (seismic acceleration and/or velocity). At the time of the release of this survey, the supplier for the two commercial SMART Cable systems under development is finalizing their sensor and vendor selection process, but future systems—like the Antarctic SMART Cable—may have some limited flexibility in the types of sensors which can be incorporated. The following questions explore the range of potential sensor capabilities under consideration for inclusion in the Antarctic SMART Cable.

8. How important is it for the sensor to measure each of the following?

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Table: Responses for Question 8

Seismic Parameters	Very Important	Important	Somewhat Important	Not Very Important	Not Important at All	Don't Know
Acceleration Response	O	O	O	O	O	O
Velocity Response	O	O	O	O	O	O
"Broadband" response (frequencies between 0.01 Hz and 100 Hz)	O	O	O	O	O	O
"Intermediate Band" response (frequencies between 0.02 Hz and 100 Hz)	O	O	O	O	O	O
Low Frequency Response (frequencies down to at least 0.02 Hz)	O	O	O	O	O	O
Very Low Frequency Response (frequencies down to at least 0.01 Hz and lower)	O	O	O	O	O	O
High Frequency Response (frequencies up to at least 100 Hz)	O	O	O	O	O	O
Very High Frequency Response (frequencies up to at least 250 Hz)	O	O	O	O	O	O

9. If you'd like, please use this space to elaborate on your answers to Question 8.

10. How important is it for the sensor to measure each of the following?

11. If you'd like, please use this space to elaborate on your answers to Question 10.

Table: Responses for Question 10

Pressure Parameters	Very Important	Important	Somewhat Important	Not Very Important	Not Important at All	Don't Know
Standard Absolute Pressure Gauge (smaller; loses calibration over time)	○	○	○	○	○	○
A-O-A Pressure Gauge (larger, does not lose calibration over time)	○	○	○	○	○	○

12. How important is it for the sensor to measure each of the following?

Table: Responses for Question 12

Temperature Parameters	Very Important	Important	Somewhat Important	Not Very Important	Not Important at All	Don't Know
Resolution Measurable to 0.1°C	○	○	○	○	○	○
Resolution Measurable to 0.01°C	○	○	○	○	○	○
Resolution Measurable to 0.001°C	○	○	○	○	○	○

13. If you'd like, please use this space to elaborate on your answers to Question 12.

14. How important is it to include the following additional sensors in the cable?

Table: Responses for Question 14

Sensor Types	Very Important	Important	Somewhat Important	Not Very Important	Not Important at All	Don't Know
Salinity	O	O	O	O	O	O
Dissolved Oxygen	O	O	O	O	O	O
Nutrients	O	O	O	O	O	O
Currents	O	O	O	O	O	O
Partial Pressure of CO2	O	O	O	O	O	O
No Additional Sensors Needed	O	O	O	O	O	O

Other (Please Specify)

15. In the previous question, for any selections you indicated were ''important'' or ''very important,'' please explain why you feel these sensor types should be included on the cable:

16. In question #14, for any selections you indicated were ''not very important'' or ''not important at all,'' please explain why you feel these sensor types are not needed:

17. In your view, how do SMART and distributed fiber sensing (*i.e.,* DAS and DTS) complement one another?

18. What new scientific discoveries or breakthroughs do you anticipate as a direct result of having access to the long-term measurement data collected by the cable's sensors?

New Sensor Technologies

To catalyze rapid sensor development and increase their Technology Readiness Levels (TRLs) for inclusion in the Antarctic SMART Cable, a range of organizational approaches may be necessary.

19. Should NSF facilitate further development for SMART Cable sensors? If so, how (*i.e.,* research labs/institutions/industry/partnerships, etc.)?

Yes

No

Don't know

20. If you'd like, please use this space to elaborate on your answer to question 19.

Location of the SMART Cable, Sensors, and Future Cable Expansion

For some segments of the cable, it may be possible to shift the cable's path slightly in some locations to accommodate additional science or enable long-term monitoring of specific scientific targets. Further, depending upon the final technological solution(s) for how sensor units will be incorporated into the cable, there may be opportunities to select the locations of some of the sensor modules. Finally, the cable may be able to include one or more Branching Units (BUs). A BU can be used for multiple purposes, such as adding another cable branch, attaching a localized device, or providing an entry point for including a localized network of sensors focused on a specific area or areas.

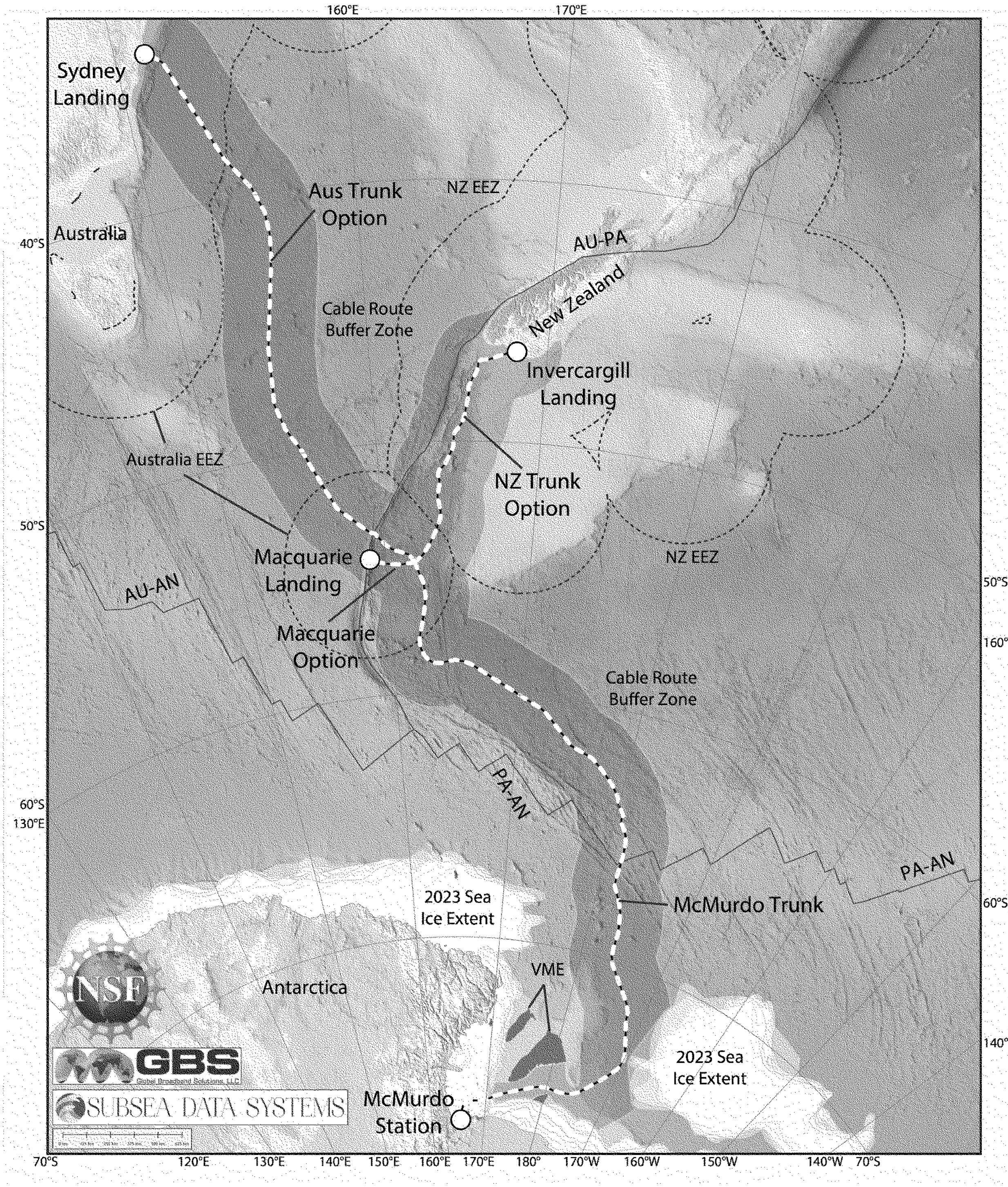

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Figure Caption: Potential routes for the Antarctica SMART Cable system based on the 2023 Desktop Study (*https://www.nsf.gov/geo/opp/documents/NSF_Public%20Release%20DTS_Final.pdf*). Thick white dashed lines represent primary McMurdo Trunk and three proposed cable segments with optional landings at (a) Macquarie Island, (b) Invercargill, New Zealand, and (c) Sydney, Australia. Proposed Cable Landing Stations are marked by white circles. Vulnerable Marine Ecosystem (VME) areas near McMurdo Station are shaded dark gray. The dark gray zone around trunk and cable options shows buffer zones where Branching Unit (BU) stubs could extend. Tectonic plate boundaries (AU: Indo-Australian Plate; AN: Antarctic Plate; PA: Pacific Plate) are denoted by thin black lines.

21. Referring to the above Figure and noting the region of potential cable locations, would you shift the position of the proposed cable route within the buffer zone (dark gray area in the figure)? If so, where? Note that cable path shifts will be minimal without additional engineering evaluations for deployment feasibility and cable safety.

Yes
No
Don't know

22. If you'd like, please use this space to elaborate on your answer to question 21.

23. How valuable would it be to your research to be able to select the specific locations of the SMART sensor modules along the cable?

Very valuable
Valuable
Somewhat valuable
Not very valuable
Not valuable at all

24. How important is it to include one or more Branching Units?

Very important
Important
Somewhat important
Not very important
Not important at all

25. In terms of current and future research, in your view what are potential uses for Branching Units?

26. Referring again to the above Figure and noting the corridor available around the trunk lines to deploy stubs from Branching Units (dark gray shaded areas surrounding the white dotted lines), would you place additional BUs?

Yes
No
Don't Know

27. If you'd like, please use this space to elaborate on your answers to question 26. If you answered yes, please indicate where and why.

28. What potential do you see for the cable to enable the vision of the networked ocean as a relay platform for an ''Internet of Underwater Things'', such as subsea gliders, submersible float sensors, ROVs and similar submersible autonomous instrumentation systems?

Partnerships and the Project

The Whitepaper (*https://goosocean.org/news/un-ocean-decade-challenge-7-white-paper-a-roadmap-for-the-observing-system-we-need/*) addressing Challenge 7 (''Expand the Global Ocean Observing System'') from the UN IOC/UNESCO Decade of Ocean Science for Sustainable Development (2021–2030) (''Ocean Decade 2030'') program indicates that significant investments will be needed to meet the challenges for global ocean observation goals while current investments and mechanisms are inadequate. There is a clear call for multi-sector engagements such as public-private partnerships and international collaborations for a ''new economic thinking'' to provide the resources needed.

29. What private and/or public sector groups (*e.g.,* academic, non-profit, industry, etc.) do you think may have an active interest in partnership activities with NSF for aspects of the cable system development?

Contribution of the Antarctic SMART Cable To Resolve Global Challenges

30. Beyond the potential direct benefits to support science in the Antarctic and the region covered directly by the Antarctic SMART Cable, there may be broader benefits to developing the Antarctic SMART Cable. In your view, what are the global, national, and societal benefits of this cable?

Future Science Workshop

31. A successor science workshop is being considered for 2025 to build upon and extend the work of the June 2021 workshop and this Electronic On-Line Submission. How interested would you be in attending virtually or in-person, provided full or partial travel expenses could be provided?

Table: Responses for Question 31

Future Science Workshop Participation	Very Interested	Interested	Somewhat Interested	Not Very Interested	Not Interested at All
Attending Virtually	○	○	○	○	○
Attending In-person	○	○	○	○	○

Final Thoughts

32. If there is anything else you'd like to share or elaborate upon regarding the topics mentioned here, please provide them here.

33. Please complete the form below to indicate your interest in future participation in this project. This is completely voluntary, and your responses collected will be included in the analysis regardless of your response below.

Name ____________________
Affiliation ____________________
Title/Position ____________________
Email address ____________________

Authority: 42 U.S.C. 1861, et al.

Dated: November 15, 2024.

Suzanne H. Plimpton,

Reports Clearance Officer, National Science Foundation.

[FR Doc. 2024–27292 Filed 11–20–24; 8:45 am]

BILLING CODE 7555–01–P

NUCLEAR REGULATORY COMMISSION

[Docket No. 50–263; NRC–2023–0031]

Northern States Power Company; Monticello Nuclear Generating Plant, Unit 1; Final Site-Specific Environmental Impact Statement

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) has published a final Site-Specific Environmental Impact Statement (EIS), issued as NUREG–1437, Supplement 26, Second Renewal, ''Site-Specific Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Subsequent License Renewal for Monticello Nuclear Generating Plant, Unit 1, Final Report.'' This EIS evaluates, on a site-specific basis, the environmental impacts of subsequent license renewal (SLR) of Facility Operating License No. DPR–22 for an additional 20 years of operation for Monticello Nuclear Generating Plant (Monticello), Unit 1. Monticello is located approximately 35 miles NW of Minneapolis, MN. Alternatives to the proposed action of subsequent license renewal for Monticello include the no-