UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the Quarterly Period Ended June 30, 2023

or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number 1-16411

NORTHROP GRUMMAN CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	**80-0640649**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
2980 Fairview Park Drive **Falls Church, Virginia**	**22042**
(Address of principal executive offices)	(Zip Code)

(703) 280-2900

(Registrant’s telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	NOC	New York Stock Exchange

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company” and “emerging growth company” in Rule 12b-2 of the Exchange Act:

Large Accelerated Filer ☒ Accelerated Filer ☐

Non-accelerated Filer ☐ Smaller Reporting Company ☐

Emerging Growth Company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes ☐ No ☒

Indicate the number of shares outstanding of each of the issuer’s classes of common stock, as of the latest practicable date.
As of July 24, 2023, 151,299,696 shares of common stock were outstanding.

NORTHROP GRUMMAN CORPORATION

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CONDENSED CONSOLIDATED STATEMENTS OF EARNINGS AND COMPREHENSIVE INCOME (Unaudited)

	Three Months Ended June 30		Six Months Ended June 30	
$ in millions, except per share amounts	**2023**	2022	**2023**	2022
Sales				
Product	**$ 7,441**	$ 6,779	**$ 14,712**	$ 13,620
Service	**2,135**	2,022	**4,165**	3,978
Total sales	**9,576**	8,801	**18,877**	17,598
Operating costs and expenses				
Product	**5,876**	5,281	**11,603**	10,661
Service	**1,660**	1,561	**3,249**	3,105
General and administrative expenses	**1,073**	1,005	**2,111**	1,981
Total operating costs and expenses	**8,609**	7,847	**16,963**	15,747
Operating income	**967**	954	**1,914**	1,851
Other (expense) income				
Interest expense	**(147)**	(131)	**(276)**	(264)
Non-operating FAS pension benefit	**133**	377	**265**	753
Other, net	**34**	(50)	**82**	(46)
Earnings before income taxes	**987**	1,150	**1,985**	2,294
Federal and foreign income tax expense	**175**	204	**331**	393
Net earnings	**$ 812**	$ 946	**$ 1,654**	$ 1,901
Basic earnings per share	**$ 5.35**	$ 6.09	**$ 10.87**	$ 12.21
Weighted-average common shares outstanding, in millions	**151.7**	155.4	**152.1**	155.7
Diluted earnings per share	**$ 5.34**	$ 6.06	**$ 10.83**	$ 12.16
Weighted-average diluted shares outstanding, in millions	**152.2**	156.0	**152.7**	156.3
Net earnings (from above)	**$ 812**	$ 946	**$ 1,654**	$ 1,901
Other comprehensive income (loss), net of tax				
Change in cumulative translation adjustment	**3**	(13)	**5**	(15)
Change in other, net	**(2)**	—	**(2)**	(1)
Other comprehensive income (loss), net of tax	**1**	(13)	**3**	(16)
Comprehensive income	**$ 813**	$ 933	**$ 1,657**	$ 1,885

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

NORTHROP GRUMMAN CORPORATION

CONDENSED CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
(Unaudited)

$ in millions, except par value	**June 30, 2023**	December 31, 2022
Assets		
Cash and cash equivalents	**$ 3,384**	$ 2,577
Accounts receivable, net	**2,096**	1,511
Unbilled receivables, net	**5,870**	5,983
Inventoried costs, net	**1,287**	978
Prepaid expenses and other current assets	**1,232**	1,439
Total current assets	**13,869**	12,488
Property, plant and equipment, net of accumulated depreciation of $7,611 for 2023 and $7,258 for 2022	**8,976**	8,800
Operating lease right-of-use assets	**1,763**	1,811
Goodwill	**17,517**	17,516
Intangible assets, net	**344**	384
Deferred tax assets	**452**	162
Other non-current assets	**2,688**	2,594
Total assets	**$ 45,609**	$ 43,755
Liabilities		
Trade accounts payable	**$ 2,056**	$ 2,587
Accrued employee compensation	**1,878**	2,057
Advance payments and billings in excess of costs incurred	**3,397**	3,609
Other current liabilities	**4,226**	3,334
Total current liabilities	**11,557**	11,587
Long-term debt, net of current portion of $1,097 for 2023 and $1,072 for 2022	**13,796**	11,805
Pension and other postretirement benefit plan liabilities	**1,161**	1,188
Operating lease liabilities	**1,772**	1,824
Other non-current liabilities	**1,837**	2,039
Total liabilities	**30,123**	28,443
Commitments and contingencies (Note 6)		
Shareholders' equity		
Preferred stock, $1 par value; 10,000,000 shares authorized; no shares issued and outstanding	**—**	—
Common stock, $1 par value; 800,000,000 shares authorized; issued and outstanding: 2023—151,388,972 and 2022—153,157,924	**151**	153
Paid-in capital	**—**	—
Retained earnings	**15,485**	15,312
Accumulated other comprehensive loss	**(150)**	(153)
Total shareholders' equity	**15,486**	15,312
Total liabilities and shareholders' equity	**$ 45,609**	$ 43,755

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

NORTHROP GRUMMAN CORPORATION

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

$ in millions	Six Months Ended June 30 **2023**	2022
Operating activities		
Net earnings	**$ 1,654**	$ 1,901
Adjustments to reconcile to net cash provided by (used in) operating activities:		
Depreciation and amortization	**621**	633
Stock-based compensation	**47**	42
Deferred income taxes	**(423)**	(399)
Net periodic pension and OPB income	**(154)**	(597)
Pension and OPB contributions	**(75)**	(71)
Changes in assets and liabilities:		
Accounts receivable, net	**(591)**	(920)
Unbilled receivables, net	**110**	(719)
Inventoried costs, net	**(331)**	(98)
Prepaid expenses and other assets	**66**	114
Accounts payable and other liabilities	**(1,043)**	(724)
Income taxes payable, net	**285**	86
Other, net	**51**	67
Net cash provided by (used in) operating activities	**217**	(685)
Investing activities		
Capital expenditures	**(613)**	(507)
Other, net	**1**	39
Net cash used in investing activities	**(612)**	(468)
Financing activities		
Net proceeds from issuance of long-term debt	**1,995**	—
Net borrowings on commercial paper	**768**	—
Common stock repurchases	**(931)**	(640)
Cash dividends paid	**(554)**	(519)
Payments of employee taxes withheld from share-based awards	**(50)**	(48)
Other, net	**(26)**	(1)
Net cash provided by (used in) financing activities	**1,202**	(1,208)
Increase (decrease) in cash and cash equivalents	**807**	(2,361)
Cash and cash equivalents, beginning of year	**2,577**	3,530
Cash and cash equivalents, end of period	**$ 3,384**	$ 1,169

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

NORTHROP GRUMMAN CORPORATION

CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
(Unaudited)

	Three Months Ended June 30		Six Months Ended June 30	
$ in millions, except per share amounts	**2023**	2022	**2023**	2022
Common stock				
Beginning of period	**$ 152**	$ 156	**$ 153**	$ 156
Common stock repurchased	**(1)**	(1)	**(2)**	(2)
Shares issued for employee stock awards and options	**—**	—	**—**	1
End of period	**151**	155	**151**	155
Paid-in capital				
Beginning of period	**—**	—	**—**	—
End of period	**—**	—	**—**	—
Retained earnings				
Beginning of period	**15,135**	13,277	**15,312**	12,913
Common stock repurchased	**(204)**	(323)	**(930)**	(638)
Net earnings	**812**	946	**1,654**	1,901
Dividends declared	**(284)**	(270)	**(549)**	(516)
Stock compensation	**26**	25	**(2)**	(5)
End of period	**15,485**	13,655	**15,485**	13,655
Accumulated other comprehensive loss				
Beginning of period	**(151)**	(146)	**(153)**	(143)
Other comprehensive income (loss), net of tax	**1**	(13)	**3**	(16)
End of period	**(150)**	(159)	**(150)**	(159)
Total shareholders' equity	**$ 15,486**	$ 13,651	**$ 15,486**	$ 13,651
Cash dividends declared per share	**$ 1.87**	$ 1.73	**$ 3.60**	$ 3.30

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Unaudited)

1. BASIS OF PRESENTATION

Principles of Consolidation and Reporting

These unaudited condensed consolidated financial statements (the "financial statements") include the accounts of Northrop Grumman Corporation and its subsidiaries and joint ventures or other investments for which we consolidate the financial results (herein referred to as "Northrop Grumman," the "company," "we," "us," or "our"). Intercompany accounts, transactions and profits are eliminated in consolidation. Investments in equity securities and joint ventures where the company has significant influence, but not control, are accounted for using the equity method.

These financial statements are prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP" or "FAS") and in accordance with the rules of the Securities and Exchange Commission (SEC) for interim reporting. The financial statements include adjustments of a normal recurring nature considered necessary by management for a fair presentation of the company's unaudited condensed consolidated financial position, results of operations and cash flows.

Results reported in these financial statements are not necessarily indicative of results that may be expected for the entire year. These financial statements should be read in conjunction with the information contained in the company's 2022 Annual Report on Form 10-K. During the first quarter of 2023, we changed the presentation of the components of other comprehensive income (loss), net of tax in the Unaudited condensed consolidated statements of earnings and comprehensive income. Prior period amounts have been recast to conform to current period presentation. This change in presentation had no impact on our previously reported comprehensive income in total.

Quarterly information is labeled using a calendar convention; that is, first quarter is consistently labeled as ending on March 31, second quarter as ending on June 30 and third quarter as ending on September 30. It is the company's long-standing practice to establish actual interim closing dates using a "fiscal" calendar, in which we close our books on a Friday near these quarter-end dates in order to normalize the potentially disruptive effects of quarterly closings on business processes. This practice is only used at interim periods within a reporting year.

Accounting Estimates

Preparation of the financial statements requires management to make estimates and judgments that affect the reported amounts of assets and liabilities and the disclosure of contingencies at the date of the financial statements, as well as the reported amounts of sales and expenses during the reporting period. Estimates have been prepared using the most current and best available information; however, actual results could differ materially from those estimates.

Revenue Recognition

Contract Estimates

We recognize changes in estimated contract sales or costs and the resulting changes in contract profit on a cumulative basis. Net estimate-at-completion (EAC) adjustments represent the cumulative effect of the changes on current and prior periods; sales and operating margins in future periods are recognized as if the revised estimates had been used since contract inception. If it is determined that a loss is expected to result on an individual performance obligation, the entire amount of the estimable future loss, including an allocation of general and administrative expense, is charged against income in the period the loss is identified.

The following table presents the effect of aggregate net EAC adjustments:

	Three Months Ended June 30		Six Months Ended June 30	
$ in millions, except per share data	**2023**	2022	**2023**	2022
Revenue	**$ 95**	$ 95	**$ 157**	$ 304
Operating income	**76**	92	**122**	265
Net earnings[(1)]	**60**	73	**96**	209
Diluted earnings per share[(1)]	**0.39**	0.47	**0.63**	1.34

(1) Based on a 21 percent statutory tax rate.

EAC adjustments on a single performance obligation can have a significant effect on the company's financial statements. When such adjustments occur, we generally disclose the nature, underlying conditions and financial impact of the adjustments. During the three months ended June 30, 2023, we recorded a $36 million unfavorable

EAC adjustment on the Habitation and Logistics Outpost (HALO) program at Space Systems largely due to cost growth stemming from evolving Lunar Gateway architecture and mission requirements combined with macroeconomic challenges. During the three months ended March 31, 2022, we recorded a $67 million favorable EAC adjustment on the engineering, manufacturing and development (EMD) phase of the B-21 program at Aeronautics Systems. No EAC adjustments on a single performance obligation had a significant impact on the financial statements during the three months ended March 31, 2023 or June 30, 2022.

Backlog
Backlog represents the future sales we expect to recognize on firm orders received by the company and is equivalent to the company's remaining performance obligations at the end of each period. It comprises both funded backlog (firm orders for which funding is authorized and appropriated) and unfunded backlog. Unexercised contract options and indefinite delivery indefinite quantity (IDIQ) contracts are not included in backlog until the time an option or IDIQ task order is exercised or awarded. Backlog is converted into sales as costs are incurred or deliveries are made.

Company backlog as of June 30, 2023 was $78.8 billion. Of our June 30, 2023 backlog, we expect to recognize approximately 40 percent as revenue over the next 12 months and 65 percent as revenue over the next 24 months, with the remainder to be recognized thereafter.

Contract Assets and Liabilities
For each of the company's contracts, the timing of revenue recognition, customer billings, and cash collections results in a net contract asset or liability at the end of each reporting period. Contract assets are equivalent to and reflected as Unbilled receivables in the unaudited condensed consolidated statements of financial position and are primarily related to long-term contracts where revenue recognized under the cost-to-cost method exceeds amounts billed to customers. Contract liabilities are equivalent to and reflected as Advance payments and billings in excess of costs incurred in the unaudited condensed consolidated statements of financial position. The amount of revenue recognized for the three and six months ended June 30, 2023 that was included in the December 31, 2022 contract liability balance was $899 million and $2.6 billion, respectively. The amount of revenue recognized for the three and six months ended June 30, 2022 that was included in the December 31, 2021 contract liability balance was $466 million and $1.9 billion, respectively.

Disaggregation of Revenue
See Note 9 for information regarding the company's sales by customer type, contract type and geographic region for each of our segments. We believe those categories best depict how the nature, amount, timing and uncertainty of our revenue and cash flows are affected by economic factors.

Property, Plant, and Equipment
During the six months ended June 30, 2022, the company received lease incentives for landlord funded leasehold improvements of $63 million related to a Space Systems real estate lease, which were recorded in PP&E and included in non-cash investing activities. During the six months ended June 30, 2022, the company acquired $46 million of internal use software through long-term financing directly with the supplier. The software was recorded in PP&E as a non-cash investing activity and the related liability was recorded in long-term debt as a non-cash financing activity. Non-cash investing activities also include capital expenditures incurred but not yet paid of $62 million and $73 million as of June 30, 2023 and 2022, respectively.

Sale of Minority Investment
In April 2023, the company reached an agreement to sell its minority investment in an international business. The transaction, which is subject to final government approvals and closing conditions, is expected to be completed in the third quarter. We expect to recognize a pre-tax gain of approximately $100 million when the transaction closes.

Accumulated Other Comprehensive Loss
The components of accumulated other comprehensive loss, net of tax, are as follows:

$ in millions	**June 30, 2023**	December 31, 2022
Cumulative translation adjustment	**$ (156)**	$ (161)
Other, net	**6**	8
Total accumulated other comprehensive loss	**$ (150)**	$ (153)

Related Party Transactions
For all periods presented, the company had no material related party transactions.

Accounting Standards Updates

Accounting standards updates adopted and/or issued, but not effective until after June 30, 2023, are not expected to have a material effect on the company's unaudited condensed consolidated financial position, annual results of operations and/or cash flows.

2. EARNINGS PER SHARE, SHARE REPURCHASES AND DIVIDENDS ON COMMON STOCK

Basic Earnings Per Share

We calculate basic earnings per share by dividing net earnings by the weighted-average number of shares of common stock outstanding during each period.

Diluted Earnings Per Share

Diluted earnings per share include the dilutive effect of awards granted to employees under stock-based compensation plans. The dilutive effect of these securities totaled 0.5 million shares and 0.6 million shares for the three and six months ended June 30, 2023, respectively, and 0.6 million shares for the three and six months ended June 30, 2022.

Share Repurchases

On January 25, 2021, the company's board of directors authorized a share repurchase program of up to $3.0 billion of the company's common stock (the "2021 Repurchase Program"). Repurchases under the 2021 Repurchase Program commenced in October 2021 and were completed in April 2023.

On January 24, 2022, the company's board of directors authorized a new share repurchase program of up to an additional $2.0 billion in share repurchases of the company's common stock (the "2022 Repurchase Program"). Repurchases under the 2022 Repurchase Program commenced in April 2023 upon completion of the 2021 Repurchase Program. As of June 30, 2023, repurchases under the 2022 Repurchase Program totaled 0.3 billion; $1.7 billion remained under this share repurchase authorization. By its terms, the 2022 Repurchase Program will expire when we have used all authorized funds for repurchases.

During the first quarter of 2023, the company entered into an accelerated share repurchase (ASR) agreement with Bank of America, N.A. (Bank of America) to repurchase $500 million of the company's common stock as part of the 2021 and 2022 Repurchase Programs. Under the agreement, we made a payment of $500 million to Bank of America and received an initial delivery of 0.9 million shares valued at $400 million that were immediately canceled by the company. The remaining balance of $100 million was settled on April 27, 2023 with a final delivery of 0.2 million shares from Bank of America. The final average purchase price was $458.28 per share.

Share repurchases take place from time to time, subject to market conditions and management's discretion, in the open market or in privately negotiated transactions. The company retires its common stock upon repurchase and, in the periods presented, has not made any purchases of common stock other than in connection with these publicly announced repurchase programs.

The table below summarizes the company's share repurchases to date under the authorizations described above:

					Shares Repurchased (in millions)	
					Six Months Ended June 30	
Repurchase Program Authorization Date	Amount Authorized (in millions)	Total Shares Retired (in millions)	Average Price Per Share[1]	Date Completed	**2023**	2022
January 25, 2021	$ 3,000	7.0	$ 431.05	April 2023	**1.4**	1.6
January 24, 2022	$ 2,000	0.6	$ 452.91		**0.6**	—

[1] Includes commissions paid.

Dividends on Common Stock

In May 2023, the company increased the quarterly common stock dividend 8 percent to $1.87 per share from the previous amount of $1.73 per share.

3. INCOME TAXES

	Three Months Ended June 30		Six Months Ended June 30	
$ in millions	**2023**	2022	**2023**	2022
Federal and foreign income tax expense	**$ 175**	$ 204	**$ 331**	$ 393
Effective income tax rate	**17.7 %**	17.7 %	**16.7 %**	17.1 %

Current Quarter
The company's second quarter 2023 effective tax rate (ETR) of 17.7 percent was comparable with the prior year period and reflects higher interest expense on unrecognized tax benefits, offset by favorable returns on tax-exempt marketable securities. The second quarter 2023 ETR includes benefits of $38 million for research credits and $14 million for foreign derived intangible income (FDII). The second quarter 2022 ETR included benefits of $41 million for research credits and $15 million for FDII.

Year to Date
The company's year to date 2023 ETR decreased to 16.7 percent from 17.1 percent in the prior year period principally due to higher current year ETR benefits associated with research credits and FDII deductions as well as favorable returns on tax-exempt marketable securities, partially offset by higher interest expense on unrecognized tax benefits. The year to date 2023 ETR includes benefits of $78 million for research credits and $29 million for FDII. The year to date 2022 ETR included benefits of $82 million for research credits and $29 million for FDII.

Taxes receivable, which are included in Prepaid expenses and other current assets in the unaudited condensed consolidated statements of financial position, were $566 million as of June 30, 2023 and $850 million as of December 31, 2022.

The company has recorded unrecognized tax benefits related to our methods of accounting associated with the timing of revenue recognition and related costs and the 2017 Tax Cuts and Jobs Act, which includes related final revenue recognition regulations issued in December 2020 under IRC Section 451(b) and procedural guidance issued in August 2021. As of June 30, 2023, we have approximately $1.6 billion in unrecognized tax benefits, including $601 million related to our position on IRC Section 451(b). If these matters, including our position on IRC Section 451(b), are unfavorably resolved, there could be a material impact on our future cash flows. It is reasonably possible that within the next 12 months our unrecognized tax benefits related to these matters may increase by approximately $120 million.

In the second quarter of 2023, the California Franchise Tax Board approved a resolution of the state examination primarily related to California state apportionment in the company's 2007 to 2016 tax years, resulting in a $95 million reduction to our unrecognized tax benefits and an $11 million reduction to unallocated corporate expense.

We file income tax returns in the U.S. federal jurisdiction and in various state and foreign jurisdictions. The Northrop Grumman 2014-2020 federal tax returns and refund claims related to its 2007-2016 federal tax returns are currently under Internal Revenue Service (IRS) examination. During the second quarter of 2023, the company entered into an agreed Revenue Agent's Report ("RAR") for certain matters related to the company's 2014-2017 federal income tax returns, resulting in a $90 million reduction to our unrecognized tax benefits and an immaterial impact to income tax expense.

Our current unrecognized tax benefits, which are included in Other current liabilities in the unaudited condensed consolidated statements of financial position, were $689 million and $728 million as of June 30, 2023 and December 31, 2022, respectively, with the remainder of our unrecognized tax benefits included within Other non-current liabilities.

4. FAIR VALUE OF FINANCIAL INSTRUMENTS

The company holds a portfolio of marketable securities to partially fund non-qualified employee benefit plans. A portion of these securities are held in common/collective trust funds and are measured at fair value using net asset value (NAV) per share as a practical expedient; therefore, they are not categorized in the fair value hierarchy table below. Marketable securities are included in Other non-current assets in the unaudited condensed consolidated statements of financial position.

The company's derivative portfolio consists primarily of foreign currency forward contracts. Where model-derived valuations are appropriate, the company utilizes the income approach to determine the fair value using internal models based on observable market inputs.

The following table presents the financial assets and liabilities the company records at fair value on a recurring basis identified by the level of inputs used to determine fair value:

	June 30, 2023				December 31, 2022			
$ in millions	**Level 1**	**Level 2**	**Level 3**	**Total**	Level 1	Level 2	Level 3	Total
Financial Assets								
Marketable securities	**$ 316**	**$ —**	**$ 8**	**$ 324**	$ 310	$ 1	$ 8	$ 319
Marketable securities valued using NAV				**10**				13
Total marketable securities	**316**	**—**	**8**	**334**	310	1	8	332
Derivatives	**—**	**2**	**—**	**2**	—	7	—	7

The notional value of the company's foreign currency forward contracts at June 30, 2023 and December 31, 2022 was $271 million and $221 million, respectively. The portion of notional value designated as a cash flow hedge at June 30, 2023 and December 31, 2022 was $59 million and $87 million, respectively.

The derivative fair values and related unrealized gains/losses at June 30, 2023 and December 31, 2022 were not material.

There were no transfers of financial instruments into or out of Level 3 of the fair value hierarchy during the six months ended June 30, 2023.

The carrying value of cash and cash equivalents and commercial paper approximates fair value.

Long-term Debt

The estimated fair value of long-term debt was $14.3 billion and $12.1 billion as of June 30, 2023 and December 31, 2022, respectively. We calculated the fair value of long-term debt using Level 2 inputs, based on interest rates available for debt with terms and maturities similar to the company's existing debt arrangements. The current portion of long-term debt is recorded in Other current liabilities in the unaudited condensed consolidated statements of financial position.

Unsecured Senior Notes

In February 2023, the company issued $2.0 billion of unsecured senior notes for general corporate purposes, which may include debt repayment (including our 3.25% senior notes due in August 2023), share repurchases, and working capital, as follows:

- $1.0 billion of 4.70% senior notes due 2033 (the "2033 Notes") and
- $1.0 billion of 4.95% senior notes due 2053 (the "2053 Notes").

We refer to the 2033 Notes and the 2053 Notes, together, as the "notes." Interest on the notes is payable semi-annually in arrears. The notes are generally subject to redemption, in whole or in part, at the company's discretion at any time, or from time to time, prior to maturity at a redemption price equal to the greater of 100% of the principal amount of the notes to be redeemed or an applicable "make-whole" amount, plus accrued and unpaid interest.

5. INVESTIGATIONS, CLAIMS AND LITIGATION

The company is engaged in remediation activities relating to environmental conditions allegedly resulting from historic operations at the former United States Navy and Grumman facilities in Bethpage, New York. For over 20 years, the company has worked closely with the United States Navy, the United States Environmental Protection Agency, the New York State Department of Environmental Conservation (NYSDEC), the New York State Department of Health and other federal, state and local governmental authorities, to address legacy environmental conditions in Bethpage. In December 2019, the State of New York issued an Amended Record of Decision seeking to impose additional remedial requirements beyond measures the company previously had been taking. In December 2020, the parties reached a tentative agreement regarding the steps the company would take to implement the State's Amended Record of Decision and to resolve certain potential other claims, including for natural resource damages. On September 22, 2021, the State of New York issued for public comment a new consent decree reflecting the agreement. On December 7, 2021, the public comment period closed. On August 3, 2022, the court approved the consent decree. We have also reached agreements with the Department of Defense and the Bethpage and South Farmingdale Water Districts to resolve claims involving these parties. Those agreements have also been approved by the courts as necessary. The company continues to be involved in related disputes with the Towns of Oyster Bay and Hempstead.

We have incurred, and expect to continue to incur, as included in Note 6, substantial remediation costs related to the legacy Bethpage environmental conditions. It is also possible that applicable remediation standards and other requirements to which we are subject may continue to change, and that our costs may increase materially. In addition to disputes and legal proceedings related to environmental conditions and remediation at the site, we are a party to various individual lawsuits and a putative class action alleging personal injury and property damage in the Eastern District of New York. The filed individual lawsuits have been stayed, pending a court decision on class certification. We are also a party, and may become a party, to other lawsuits brought by or against insurance carriers, and by other individual plaintiffs and/or putative classes, as well as other parties. We cannot at this time predict or reasonably estimate the potential cumulative outcomes or ranges of possible liability of these Bethpage lawsuits.

In June 2018, the FTC issued a Decision and Order enabling the company's acquisition of OATK to proceed and providing generally for the company to continue to make solid rocket motors available to competing missile primes on a non-discriminatory basis. The company has taken and continues to take robust actions to help ensure compliance with the terms of the Order. Similarly, the Compliance Officer, appointed under the Order, and the FTC have taken and continue to take various actions to oversee compliance. In October 2019, the company received a civil investigative demand (CID) from the FTC requesting certain information relating to a potential issue regarding the company's compliance with the Order in connection with a then pending missile competition. The company promptly provided information in response to the request. In late 2021, the company resumed discussions with staff at the FTC regarding our response and their views on compliance issues. In late 2022, the company received a follow-on CID; the company responded to it earlier this year. We cannot predict any additional steps, but we do not believe they are likely to have a material adverse effect on the company's unaudited condensed consolidated financial position as of June 30, 2023, or its annual results of operations and/or cash flows. We believe the company has been and continues to be in compliance with the Order.

The company received from the U.S. Department of Justice (DOJ) a criminal subpoena on December 9, 2022, and a civil investigative demand on February 2, 2023, both seeking information regarding financial and cost accounting and controls that appears focused on the interest rate assumptions the company used to determine our CAS pension expense, which we have previously discussed in Note 6 below. The company is engaging with the government and responding to the requests. We cannot at this point predict the outcome of these matters.

The company is a party to various other investigations, lawsuits, arbitration, claims, enforcement actions and other legal proceedings, including government investigations and claims, that arise in the ordinary course of our business. The nature of legal proceedings is such that we cannot assure the outcome of any particular matter. However, based on information available to the company to date, the company does not believe that the outcome of any of these other matters pending against the company is likely to have a material adverse effect on the company's unaudited condensed consolidated financial position as of June 30, 2023, or its annual results of operations and/or cash flows.

6. COMMITMENTS AND CONTINGENCIES

U.S. Government Cost Claims and Contingencies

From time to time, the company is advised of claims by the U.S. government concerning certain potential disallowed costs, plus, at times, penalties and interest. When such findings are presented, the company and U.S. government representatives engage in discussions to enable the company to evaluate the merits of these claims, as well as to assess the amounts being claimed. Where appropriate, provisions are made to reflect the company's estimated exposure for such potential disallowed costs. Such provisions are reviewed periodically using the most recent information available. The company believes it has adequately reserved for disputed amounts that are probable and reasonably estimable, and that the outcome of any such matters would not have a material adverse effect on its unaudited condensed consolidated financial position as of June 30, 2023, or its annual results of operations and/or cash flows.

In 2019, the Defense Contract Management Agency (DCMA) raised questions about an interest rate assumption used by the company to determine our CAS pension expense. On June 1, 2020, DCMA provided written notice that the assumptions the company used during the period 2013-2019 were potentially noncompliant with CAS. We submitted a formal response on July 31, 2020, which we believed demonstrates the appropriateness of the assumptions used. On November 24, 2020, DCMA replied to the company's response, disagreeing with our position and requesting additional input, which we provided on February 22, 2021. We have continued to exchange correspondence and engage with DCMA and DoD on this matter, including responding to requests for and providing additional information. As noted in Note 5 above, the company received from the DOJ a criminal subpoena on December 9, 2022 and a CID on February 2, 2023, both seeking information that appears related to the interest rate assumptions at issue in our discussions with DCMA. The company is engaging with the government and responding to the requests. We cannot at this point predict the outcome of these matters. The company is also continuing to engage with DCMA/DoD. As previously described, the sensitivity to changes in interest rate assumptions makes it reasonably possible the outcome of the DCMA matter could have a material adverse effect on our financial position, results of operations and/or cash flows, although we are not currently able to estimate a range of any potential loss.

B-21 Low-Rate Initial Production Options

In 2015, the U.S. Air Force awarded to Northrop Grumman the B-21 contract, including a base contract for engineering, manufacturing, and design (EMD) and five low-rate initial production (LRIP) options. The EMD phase of the program is largely cost type and began at contract award. The LRIP options are largely fixed price and are expected to be awarded and executed through approximately the end of the decade. In the second quarter of 2023, we again reviewed our estimated cost to complete the LRIP phase of the B-21 program. Principally due to the company's estimate of the impact macroeconomic factors may have on our cost to complete the LRIP options, as well as ongoing discussions with our suppliers and our customer, we continue to believe it is reasonably possible one or more of the LRIP options could be performed at a loss and the range of such loss across the five LRIP options is between $0 and $1.2 billion. As we do not currently believe a loss is probable on any of the LRIP options, we have not recognized any such loss in our financial results for the period ended June 30, 2023.

Environmental Matters

The table below summarizes the amount accrued for environmental remediation costs, management's estimate of the amount of reasonably possible future costs in excess of accrued costs and the deferred costs expected to be recoverable through overhead charges on U.S. government contracts as of June 30, 2023 and December 31, 2022:

$ in millions	Accrued Costs(1)(2)	Reasonably Possible Future Costs in Excess of Accrued Costs(2)	Deferred Costs(3)
June 30, 2023	**$ 562**	**$ 353**	**$ 490**
December 31, 2022	565	353	486

(1) As of June 30, 2023, $202 million is recorded in Other current liabilities and $360 million is recorded in Other non-current liabilities.

(2) Estimated remediation costs are not discounted to present value. The reasonably possible future costs in excess of accrued costs do not take into consideration amounts expected to be recoverable through overhead charges on U.S. government contracts.

(3) As of June 30, 2023, $181 million is deferred in Prepaid expenses and other current assets and $309 million is deferred in Other non-current assets. These amounts are evaluated for recoverability on a routine basis.

Although management cannot predict whether (i) new information gained as our environmental remediation projects progress, (ii) changes in remediation standards or other requirements to which we are subject, or (iii) other changes in facts and circumstances will materially affect the estimated liability accrued, we do not anticipate that future remediation expenditures associated with our currently identified projects will have a material adverse effect on the company's unaudited condensed consolidated financial position as of June 30, 2023, or its annual results of operations and/or cash flows.

Financial Arrangements

In the ordinary course of business, the company uses standby letters of credit and guarantees issued by commercial banks and surety bonds issued principally by insurance companies to guarantee the performance on certain obligations. At June 30, 2023, there were $356 million of stand-by letters of credit and guarantees and $79 million of surety bonds outstanding.

Commercial Paper

The company maintains a commercial paper program that serves as a source of short-term financing with capacity to issue unsecured commercial paper notes up to $2.5 billion. At June 30, 2023, there were $779 million of outstanding short-term commercial paper borrowings at a weighted-average interest rate of 5.73% that have original maturities of three months or less from the date of issuance. The outstanding balance of commercial paper borrowings is recorded in Other current liabilities in the unaudited condensed consolidated statements of financial position.

Credit Facilities

The company maintains a five-year senior unsecured credit facility in an aggregate principal amount of $2.5 billion (the “2022 Credit Agreement”) that matures in August 2027 and is intended to support the company's commercial paper program and other general corporate purposes. Commercial paper borrowings reduce the amount available for borrowing under the 2022 Credit Agreement. At June 30, 2023, there were no borrowings outstanding under this facility; however, the amount available for borrowing was reduced by the $779 million of outstanding, short-term commercial paper borrowings described above.

The 2022 Credit Agreement contains generally customary terms and conditions, including covenants restricting the company’s ability to sell all or substantially all of its assets, merge or consolidate with another entity or undertake other fundamental changes and incur liens. The company also cannot permit the ratio of its debt to capitalization (as set forth in the credit agreement) to exceed 65 percent.

At June 30, 2023, the company was in compliance with all covenants under its credit agreements.

7. RETIREMENT BENEFITS

The cost to the company of its pension and other postretirement benefit (OPB) plans is shown in the following table:

	Three Months Ended June 30				Six Months Ended June 30			
	Pension Benefits		OPB		Pension Benefits		OPB	
$ in millions	**2023**	2022	**2023**	2022	**2023**	2022	**2023**	2022
Components of net periodic benefit cost (benefit)								
Service cost	**$ 59**	$ 92	**$ 1**	$ 2	**$ 118**	$ 184	**$ 2**	$ 4
Interest cost	**392**	284	**16**	12	**784**	568	**33**	24
Expected return on plan assets	**(525)**	(661)	**(21)**	(27)	**(1,049)**	(1,321)	**(42)**	(55)
Amortization of prior service (credit) cost	**—**	—	**—**	(1)	**—**	—	**—**	(1)
Net periodic benefit cost (benefit)	**$ (74)**	$ (285)	**$ (4)**	$ (14)	**$ (147)**	$ (569)	**$ (7)**	$ (28)

Employer Contributions

The company sponsors defined benefit pension and OPB plans, as well as defined contribution plans. We fund our defined benefit pension plans annually in a manner consistent with the Employee Retirement Income Security Act of 1974, as amended by the Pension Protection Act of 2006.

Contributions made by the company to its retirement plans are as follows:

	Three Months Ended June 30		Six Months Ended June 30	
$ in millions	**2023**	2022	**2023**	2022
Defined benefit pension plans	**$ 25**	$ 25	**$ 54**	$ 51
OPB plans	**10**	10	**21**	20
Defined contribution plans	**146**	122	**361**	321

8. STOCK COMPENSATION PLANS AND OTHER COMPENSATION ARRANGEMENTS

Stock Awards

The following table presents the number of restricted stock rights (RSRs) and restricted performance stock rights (RPSRs) granted to employees under the company's long-term incentive stock plan and the grant date aggregate fair value of those stock awards for the periods presented:

	Six Months Ended June 30	
in millions	**2023**	2022
RSRs granted	**0.1**	0.1
RPSRs granted	**0.1**	0.2
Grant date aggregate fair value	**$ 101**	$ 93

RSRs typically vest on the third anniversary of the grant date, while RPSRs generally vest and pay out based on the achievement of certain performance metrics over a three-year period.

Cash Awards

The following table presents the minimum and maximum aggregate payout amounts related to cash units (CUs) and cash performance units (CPUs) granted to employees in the periods presented:

	Six Months Ended June 30	
$ in millions	**2023**	2022
Minimum aggregate payout amount	**$ 34**	$ 32
Maximum aggregate payout amount	**192**	183

CUs typically vest and settle in cash on the third anniversary of the grant date, while CPUs generally vest and pay out in cash based on the achievement of certain performance metrics over a three-year period.

9. SEGMENT INFORMATION

The following table presents sales and operating income by segment:

	Three Months Ended June 30		Six Months Ended June 30	
$ in millions	**2023**	2022	**2023**	2022
Sales				
Aeronautics Systems	**$ 2,595**	$ 2,534	**$ 5,110**	$ 5,237
Defense Systems	**1,420**	1,294	**2,796**	2,577
Mission Systems	**2,641**	2,516	**5,204**	5,013
Space Systems	**3,488**	2,979	**6,838**	5,834
Intersegment eliminations	**(568)**	(522)	**(1,071)**	(1,063)
Total sales	**9,576**	8,801	**18,877**	17,598
Operating income				
Aeronautics Systems	**278**	258	**515**	565
Defense Systems	**166**	168	**326**	323
Mission Systems	**401**	413	**761**	798
Space Systems	**283**	310	**596**	571
Intersegment eliminations	**(76)**	(76)	**(144)**	(147)
Total segment operating income	**1,052**	1,073	**2,054**	2,110
FAS/CAS operating adjustment	**(21)**	(51)	**(42)**	(97)
Unallocated corporate expense	**(64)**	(68)	**(98)**	(162)
Total operating income	**$ 967**	$ 954	**$ 1,914**	$ 1,851

FAS/CAS Operating Adjustment
For financial statement purposes, we account for our employee pension plans in accordance with FAS. However, the cost of these plans is charged to our contracts in accordance with applicable Federal Acquisition Regulation (FAR) and U.S. Government Cost Accounting Standards (CAS) requirements. The FAS/CAS operating adjustment reflects the difference between CAS pension expense included as cost in segment operating income and the service cost component of FAS expense included in total operating income.

Unallocated Corporate Expense
Unallocated corporate expense includes the portion of corporate costs not considered allowable or allocable under the applicable FAR and CAS requirements, and therefore not allocated to the segments, such as changes in deferred state income taxes and a portion of management and administration, legal, environmental, compensation, retiree benefits, advertising and other corporate unallowable costs. Unallocated corporate expense also includes costs not considered part of management's evaluation of segment operating performance, such as amortization of purchased intangible assets and the additional depreciation expense related to the step-up in fair value of property, plant and equipment acquired through business combinations, as well as certain compensation and other costs.

NORTHROP GRUMMAN CORPORATION

Disaggregation of Revenue

Sales by Customer Type	Three Months Ended June 30				Six Months Ended June 30			
	2023		2022		**2023**		2022	
$ in millions	**$**	**%[3]**	$	%[3]	**$**	**%[3]**	$	%[3]
Aeronautics Systems								
U.S. government[1]	**$ 2,215**	**86 %**	$ 2,134	84 %	**$ 4,323**	**85 %**	$ 4,426	85 %
International[2]	**308**	**12 %**	328	13 %	**639**	**12 %**	671	13 %
Other customers	**8**	**— %**	14	1 %	**19**	**— %**	17	— %
Intersegment sales	**64**	**2 %**	58	2 %	**129**	**3 %**	123	2 %
Aeronautics Systems sales	**2,595**	**100 %**	2,534	100 %	**5,110**	**100 %**	5,237	100 %
Defense Systems								
U.S. government[1]	**848**	**60 %**	774	61 %	**1,651**	**59 %**	1,549	61 %
International[2]	**357**	**25 %**	328	25 %	**745**	**27 %**	621	24 %
Other customers	**20**	**1 %**	18	1 %	**36**	**1 %**	34	1 %
Intersegment sales	**195**	**14 %**	174	13 %	**364**	**13 %**	373	14 %
Defense Systems sales	**1,420**	**100 %**	1,294	100 %	**2,796**	**100 %**	2,577	100 %
Mission Systems								
U.S. government[1]	**1,877**	**71 %**	1,802	72 %	**3,812**	**73 %**	3,596	72 %
International[2]	**454**	**17 %**	415	16 %	**830**	**16 %**	848	17 %
Other customers	**27**	**1 %**	40	2 %	**42**	**1 %**	64	1 %
Intersegment sales	**283**	**11 %**	259	10 %	**520**	**10 %**	505	10 %
Mission Systems sales	**2,641**	**100 %**	2,516	100 %	**5,204**	**100 %**	5,013	100 %
Space Systems								
U.S. government[1]	**3,314**	**95 %**	2,798	94 %	**6,480**	**95 %**	5,506	94 %
International[2]	**83**	**2 %**	84	3 %	**154**	**2 %**	156	3 %
Other customers	**65**	**2 %**	66	2 %	**146**	**2 %**	110	2 %
Intersegment sales	**26**	**1 %**	31	1 %	**58**	**1 %**	62	1 %
Space Systems sales	**3,488**	**100 %**	2,979	100 %	**6,838**	**100 %**	5,834	100 %
Total								
U.S. government[1]	**8,254**	**86 %**	7,508	85 %	**16,266**	**86 %**	15,077	86 %
International[2]	**1,202**	**13 %**	1,155	13 %	**2,368**	**13 %**	2,296	13 %
Other customers	**120**	**1 %**	138	2 %	**243**	**1 %**	225	1 %
Total Sales	**$ 9,576**	**100 %**	$ 8,801	100 %	**$ 18,877**	**100 %**	$ 17,598	100 %

[1] Sales to the U.S. government include sales from contracts for which we are the prime contractor, as well as those for which we are a subcontractor and the ultimate customer is the U.S. government. Each of the company's segments derives substantial revenue from the U.S. government.

[2] International sales include sales from contracts for which we are the prime contractor, as well as those for which we are a subcontractor and the ultimate customer is an international customer. These sales include foreign military sales contracted through the U.S. government.

[3] Percentages calculated based on total segment sales.

Sales by Contract Type	Three Months Ended June 30				Six Months Ended June 30			
	2023		2022		**2023**		2022	
$ in millions	**$**	**%[1]**	$	%[1]	**$**	**%[1]**	$	%[1]
Aeronautics Systems								
Cost-type	**$ 1,319**	**52 %**	$ 1,217	49 %	**$ 2,550**	**51 %**	$ 2,493	49 %
Fixed-price	**1,212**	**48 %**	1,259	51 %	**2,431**	**49 %**	2,621	51 %
Intersegment sales	**64**		58		**129**		123	
Aeronautics Systems sales	**2,595**		2,534		**5,110**		5,237	
Defense Systems								
Cost-type	**404**	**33 %**	373	33 %	**827**	**34 %**	709	32 %
Fixed-price	**821**	**67 %**	747	67 %	**1,605**	**66 %**	1,495	68 %
Intersegment sales	**195**		174		**364**		373	
Defense Systems sales	**1,420**		1,294		**2,796**		2,577	
Mission Systems								
Cost-type	**957**	**41 %**	875	39 %	**1,918**	**41 %**	1,710	38 %
Fixed-price	**1,401**	**59 %**	1,382	61 %	**2,766**	**59 %**	2,798	62 %
Intersegment sales	**283**		259		**520**		505	
Mission Systems sales	**2,641**		2,516		**5,204**		5,013	
Space Systems								
Cost-type	**2,572**	**74 %**	2,096	71 %	**5,018**	**74 %**	4,079	71 %
Fixed-price	**890**	**26 %**	852	29 %	**1,762**	**26 %**	1,693	29 %
Intersegment sales	**26**		31		**58**		62	
Space Systems sales	**3,488**		2,979		**6,838**		5,834	
Total								
Cost-type	**5,252**	**55 %**	4,561	52 %	**10,313**	**55 %**	8,991	51 %
Fixed-price	**4,324**	**45 %**	4,240	48 %	**8,564**	**45 %**	8,607	49 %
Total Sales	**$ 9,576**		$ 8,801		**$ 18,877**		$ 17,598	

[1] Percentages calculated based on external customer sales.

NORTHROP GRUMMAN CORPORATION

Sales by Geographic Region	Three Months Ended June 30				Six Months Ended June 30			
	2023		2022		**2023**		2022	
$ in millions	**$**	**%**(2)	$	%(2)	**$**	**%**(2)	$	%(2)
Aeronautics Systems								
United States	**$ 2,223**	**88 %**	$ 2,148	87 %	**$ 4,342**	**87 %**	$ 4,443	86 %
Asia/Pacific	**138**	**5 %**	205	8 %	**285**	**6 %**	395	8 %
Europe	**165**	**7 %**	113	5 %	**339**	**7 %**	250	5 %
All other(1)	**5**	**— %**	10	— %	**15**	**— %**	26	1 %
Intersegment sales	**64**		58		**129**		123	
Aeronautics Systems sales	**2,595**		2,534		**5,110**		5,237	
Defense Systems								
United States	**868**	**71 %**	792	71 %	**1,687**	**70 %**	1,583	72 %
Asia/Pacific	**114**	**9 %**	123	11 %	**231**	**9 %**	228	10 %
Europe	**132**	**11 %**	95	8 %	**260**	**11 %**	196	9 %
All other(1)	**111**	**9 %**	110	10 %	**254**	**10 %**	197	9 %
Intersegment sales	**195**		174		**364**		373	
Defense Systems sales	**1,420**		1,294		**2,796**		2,577	
Mission Systems								
United States	**1,904**	**81 %**	1,842	81 %	**3,854**	**82 %**	3,660	81 %
Asia/Pacific	**120**	**5 %**	137	6 %	**212**	**5 %**	276	6 %
Europe	**266**	**11 %**	219	10 %	**466**	**10 %**	444	10 %
All other(1)	**68**	**3 %**	59	3 %	**152**	**3 %**	128	3 %
Intersegment sales	**283**		259		**520**		505	
Mission Systems sales	**2,641**		2,516		**5,204**		5,013	
Space Systems								
United States	**3,379**	**97 %**	2,864	97 %	**6,626**	**98 %**	5,616	97 %
Asia/Pacific	**25**	**1 %**	24	1 %	**45**	**1 %**	53	1 %
Europe	**38**	**1 %**	56	2 %	**83**	**1 %**	96	2 %
All other(1)	**20**	**1 %**	4	— %	**26**	**— %**	7	— %
Intersegment sales	**26**		31		**58**		62	
Space Systems sales	**3,488**		2,979		**6,838**		5,834	
Total								
United States	**8,374**	**88 %**	7,646	87 %	**16,509**	**88 %**	15,302	87 %
Asia/Pacific	**397**	**4 %**	489	6 %	**773**	**4 %**	952	5 %
Europe	**601**	**6 %**	483	5 %	**1,148**	**6 %**	986	6 %
All other(1)	**204**	**2 %**	183	2 %	**447**	**2 %**	358	2 %
Total Sales	**$ 9,576**		$ 8,801		**$ 18,877**		$ 17,598	

(1) All other is principally comprised of the Middle East.

(2) Percentages calculated based on external customer sales.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of
Northrop Grumman Corporation
Falls Church, Virginia

Results of Review of Interim Financial Information

We have reviewed the accompanying condensed consolidated statement of financial position of Northrop Grumman Corporation and subsidiaries (the "Company") as of June 30, 2023, and the related condensed consolidated statements of earnings and comprehensive income and changes in shareholders' equity for the three-month and six-month periods ended June 30, 2023 and 2022, and of cash flows for the six-month periods ended June 30, 2023 and 2022 and the related notes (collectively referred to as the "interim financial information"). Based on our review, we are not aware of any material modifications that should be made to the accompanying interim financial information for it to be in conformity with accounting principles generally accepted in the United States of America.

We have previously audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statement of financial position of Northrop Grumman Corporation and subsidiaries as of December 31, 2022, and the related consolidated statements of earnings and comprehensive income, changes in shareholders' equity, and cash flows for the year then ended (not presented herein); and in our report dated January 25, 2023, we expressed an unqualified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying condensed consolidated statement of financial position as of December 31, 2022, is fairly stated, in all material respects, in relation to the audited consolidated statement of financial position from which it has been derived.

Basis for Review Results

This interim financial information is the responsibility of the Company's management. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our reviews in accordance with standards of the PCAOB. A review of interim financial information consists principally of applying analytical procedures and making inquiries of persons responsible for financial and accounting matters. It is substantially less in scope than an audit conducted in accordance with the standards of the PCAOB, the objective of which is the expression of an opinion regarding the financial statements taken as a whole. Accordingly, we do not express such an opinion.

/s/ Deloitte & Touche LLP
McLean, Virginia
July 26, 2023

Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations

OVERVIEW

Northrop Grumman Corporation (herein referred to as “Northrop Grumman,” the “company,” “we,” “us,” or “our”) is a leading global aerospace and defense technology company. We deliver a broad range of products, services and solutions to United States (U.S.) and international customers, and principally to the U.S Department of Defense (DoD) and intelligence community. Our broad portfolio is aligned to support national security priorities and our solutions equip our customers with capabilities they need to connect, protect and advance humanity.

The company is a leading provider of space systems, advanced aircraft, missile defense, advanced weapons and long-range fires capabilities, mission systems, networking and communications, strategic deterrence systems, and breakthrough technologies, such as artificial intelligence, advanced computing and cyber. We are focused on competing and winning programs that enable continued growth, performing on our commitments and affordably delivering capability our customers need. With the investments we've made in advanced technologies, combined with our talented workforce and digital transformation capabilities, Northrop Grumman is well positioned to meet our customers' needs today and in the future.

The following discussion should be read along with the financial statements included in this Form 10-Q, as well as “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” “Liquidity and Capital Resources,” “Quantitative and Qualitative Disclosures About Market Risks” and “Risk Factors” in our 2022 Annual Report on Form 10-K, which provides additional information on our business, the environment in which we operate and our operating results.

Global Security Environment

The U.S. and its allies continue to face a global security environment of heightened tensions and instability, threats from state and non-state actors, including in particular major global powers, as well as terrorist organizations, increasing nuclear tensions, diverse regional security concerns and political instability. The market for defense products, services and solutions globally is driven by these complex and evolving security challenges, considered in the broader context of political and socioeconomic circumstances and priorities. Our operations and financial performance, as well as demand for our products and services, are impacted by global events, including violence and unrest. The same is true for our suppliers and other business partners.

The conflict in Ukraine has increased global tensions and instability, highlighted threats and increased global demand, as well as further disrupted global supply chains and added costs. We have experienced a modest increase in demand for certain of our goods and services directly and indirectly related to the conflict in the Ukraine. We also have experienced a slight disruption to some of our programs and supply chain, including unanticipated cost growth, as a result of the conflict in Ukraine and economic sanctions. However, we do not have sizable business dealings in Russia or Ukraine, and do not anticipate significant adverse impacts directly from the ongoing conflict.

More broadly, the conflict in Ukraine and threats elsewhere have heightened tensions and highlighted security requirements globally, especially in Europe and the Pacific region, as well as the U.S. We have started to see, and expect to continue to see, increased demand for defense products and services from allies and partner nations, particularly in those areas. We are actively exploring both opportunities and risks.

Global Health Environment

Since at least March 2020, when it was first characterized as a global pandemic, COVID-19 has dramatically impacted the global health and economic environments, including millions of confirmed cases and deaths, business slowdowns or shutdowns, labor shortfalls, supply chain challenges, regulatory challenges, inflationary pressures and market volatility. We discussed in some detail in our Annual Reports on Form 10-K for the fiscal years ended December 31, 2020, 2021, and 2022, and subsequent SEC filings, the pandemic, its impacts and risks, and actions taken up to the time of each filing. In this Form 10-Q, we provide a further update.

In May 2023, the World Health Organization declared an end to the global public health emergency for the COVID-19 pandemic. For the first half of 2023, direct impacts of the COVID-19 pandemic on our business remained limited. While we cannot predict the future course of COVID-19 or its consequences, we are not currently assuming significant additional direct COVID-19 related impacts on our business.

The company continues to work to monitor and address the global health environment, including its impact on our company, our employees, our customers, our suppliers and our communities. Our goals have been, and continue to be, to keep our employees safe, to lessen the potential adverse impacts, both health and economic, and to continue to position the company for long-term success. Like the communities in which we operate, our actions have varied, and will continue to vary, depending on the state of the global health environment, including as it relates to COVID-19 and other illnesses, applicable government requirements, and the needs of our stakeholders.

Global Economic Environment

In part as a result of the COVID-19 pandemic, the global economic environment has experienced, and continues to experience, extraordinary challenges, including high rates of inflation and inflationary pressures; widespread delays and disruptions in supply chains; workforce challenges; and market volatility. These macroeconomic factors have contributed, and we expect will continue to contribute, to increased costs, delays and other performance challenges, as well as increased competing demands for limited resources to address such increased costs and other challenges, for our company, our suppliers and partners, and our customers.

We continue to work hard to mitigate some of the challenges caused by the current macroeconomic environment on our business, including by taking steps to support our suppliers and small businesses and enhancing our workforce through extensive hiring, development and retention efforts. However, the broader macroeconomic environment, including inflationary pressures and supply chain challenges, continued adversely to affect the company's results for the quarter ended June 30, 2023. We cannot clearly predict how long these macroeconomic challenges will continue, how they will change over time, or what additional resources will be available, but we expect to see this challenging macroeconomic environment continue adversely to impact the global economy, our customers, our industry and our company in 2023.

In addition, increased interest rates, raising the cost of borrowing for governments, could further impact government spending priorities (in the U.S. and allied countries, in particular), including their demand for defense products. Economic tensions and changes in international trade policies, including higher tariffs on imported goods and materials and renegotiation of free trade agreements, could also further impact the global market for defense products, services and solutions.

U.S. Political, Budget and Regulatory Environment

On December 23, 2022, the President signed the National Defense Authorization Act (NDAA) for FY 2023, which supports approximately $858 billion in FY 2023 funding for national defense, $817 billion of which is for the DoD. In addition, the FY 2023 NDAA grants DoD discretionary authority under limited circumstances to provide extraordinary relief to contractors to address certain inflationary impacts, although the DoD has not yet exercised this authority.

On December 29, 2022, the President signed an Omnibus appropriations act for FY 2023 that provided $858 billion for national defense programs, approximately $45 billion more than the Administration initially requested for FY 2023 and approximately $76 billion or 10 percent higher than what was appropriated in FY 2022. The Pentagon's portion of the overall national defense budget for FY 2023 is $817 billion. It includes up to $1 billion for extraordinary relief in FY 2023.

On March 9, 2023, the President proposed his budget for FY 2024 with $886 billion for national defense programs, which included $842 billion for the DoD, an increase of 3 percent, or $25 billion, above the FY 2023 enacted levels. The request does not include supplemental defense spending associated with the conflict in Ukraine.

In addition to the U.S. national security budget detailed above, the U.S. has pledged over $100 billion in security assistance to address the ongoing conflict in Ukraine across FY 2022 and FY 2023, including approximately $50 billion in DoD spending. Assistance includes transfers of weapons systems from U.S. inventories, orders for production of additional weapons systems, both to backfill U.S. stockpiles and for Ukraine directly, and assistance from U.S. capabilities.

It is difficult to predict the specific course of future defense budgets. Current and future requirements related to the conflict in Ukraine, threats in the Pacific regions and other security priorities, as well as global inflation, the national debt, the costs of the pandemic and other domestic priorities, among other things, in the U.S. and globally, will continue to impact our customers' budgets, spending and priorities, and our industry. Current tensions within Congress and the wider U.S. political environment may also impact defense budgets, issues related to the national debt, and government spending more broadly.

We believe the current global security environment highlights the significant national security threats to our nation and our allies, and the need for strong deterrence and a robust defense capability. We believe our capabilities, particularly in space, C4ISR, missile defense, battle management, advanced weapons, survivable aircraft and mission systems should help our customers in the U.S. and globally defend against current and future threats and, as a result, continue to allow for long-term profitable business growth.

In January 2023, the statutory debt ceiling was reached, and the Treasury Department reported that it began taking "extraordinary measures" to finance the government and avoid a breach of the debt ceiling. The Fiscal Responsibility Act of 2023 (FRA), signed in June 2023, suspended the debt limit through January 1, 2025 and provides for caps on defense and non-defense discretionary spending in FY 2024 and FY 2025. The FRA cap on discretionary spending for defense in FY 2024 and FY 2025 is $886 billion and $895 billion, respectively. If these spending caps are exceeded, the FRA provides for automatic spending cuts that could be imposed through sequestration.

The FRA also provides for across the board cuts to discretionary spending by one percent below current-year levels if a continuing resolution is in place on January 1, 2024 or 2025. Once full-year appropriations are enacted, the spending caps are to revert to original levels specified in the FRA. If a continuing resolution is still in place on April 30, 2024 or 2025, the FRA provides that a final sequestration order could be issued that would apply to the full fiscal year. While the discretionary spending caps only apply to FY 2024 and FY 2025, the FRA also attempts to limit most discretionary funding for FY 2026 through FY 2029, subject to Congress's budgetary processes at that time. We anticipate that issues related to the debt ceiling, budgetary priorities and the spending caps imposed by the FRA will continue to be a subject of considerable debate, with a potentially significant impact on our programs and the company.

In July 2023, the House of Representatives and the Senate passed different versions of a National Defense Authorization Act. We expect this proposed legislation, and its potential impact on defense appropriations, including the duration of a possible continuing resolution, will also be the subject of considerable debate with potentially significant impacts.

More broadly, we have seen, and expect to continue to see, an accelerated pace of new rulemakings, new and expanded uses of existing authorities, changing legal rulings and landscapes, and aggressive enforcement actions. These changes and the accelerated pace of change, not only impose additional obligations and risk, but also create further uncertainty regarding our operating environment.

The political environment, federal budget, debt ceiling and regulatory environment are expected to continue to be the subject of considerable debate, especially in light of the ongoing conflict in Ukraine and heightened global tensions, the inflationary environment and political tensions. The results of those debates could have material impacts on defense spending broadly and the company's programs in particular. We anticipate that the broader macroeconomic environment, with ongoing inflationary pressures, labor challenges, and supply chain disruption, among other considerations, will continue to play a significant role in the outcome of these debates and, in turn, on our industry and company.

CONSOLIDATED OPERATING RESULTS

Selected financial highlights are presented in the table below:

	Three Months Ended June 30		%	Six Months Ended June 30		%
$ in millions, except per share amounts	**2023**	2022	**Change**	**2023**	2022	**Change**
Sales	**$ 9,576**	$ 8,801	**9 %**	**$ 18,877**	$ 17,598	**7 %**
Operating costs and expenses	**8,609**	7,847	**10 %**	**16,963**	15,747	**8 %**
Operating costs and expenses as a % of sales	***89.9 %***	*89.2 %*		***89.9 %***	*89.5 %*	
Operating income	**967**	954	**1 %**	**1,914**	1,851	**3 %**
Operating margin rate	***10.1 %***	*10.8 %*		***10.1 %***	*10.5 %*	
Federal and foreign income tax expense	**175**	204	**(14)%**	**331**	393	**(16)%**
Effective income tax rate	***17.7 %***	*17.7 %*		***16.7 %***	*17.1 %*	
Net earnings	**812**	946	**(14)%**	**1,654**	1,901	**(13)%**
Diluted earnings per share	**$ 5.34**	$ 6.06	**(12)%**	**$ 10.83**	$ 12.16	**(11)%**

Sales

Current Quarter

Second quarter 2023 sales increased $775 million, or 9 percent, due to higher sales at all four sectors. Second quarter 2023 sales reflect continued strong demand and improving labor availability and supplier deliveries.

Year to Date

Year to date 2023 sales increased $1.3 billion, or 7 percent, due to higher sales at Space Systems, Defense Systems and Mission Systems, partially offset by lower sales at Aeronautics Systems.

See “Segment Operating Results” below for further information by segment and “Product and Service Analysis” for product and service detail. See Note 9 to the financial statements for information regarding the company’s sales by customer type, contract type and geographic region for each of our segments.

Operating Income and Margin Rate

Current Quarter

Second quarter 2023 operating income increased $13 million, or 1 percent, due to a reduction in the FAS/CAS operating adjustment, partially offset by lower segment operating income. Second quarter 2023 operating margin rate declined to 10.1 percent, due to a lower segment operating margin rate, partially offset by the lower FAS/CAS operating adjustment.

Second quarter 2023 general and administrative (G&A) costs as a percentage of sales of 11.2 percent was comparable with the prior year period and reflects continued investments for future business opportunities.

Year to Date

Year to date 2023 operating income increased $63 million, or 3 percent, due to lower unallocated corporate expense and a reduction in the FAS/CAS operating adjustment, partially offset by lower segment operating income. Year to date 2023 operating margin rate declined to 10.1 percent due to a lower segment operating margin rate, partially offset by the lower unallocated corporate expense and FAS/CAS operating adjustment.

Year to date 2023 G&A costs as a percentage of sales of 11.2 percent was comparable with the prior year period and reflects continued investments for future business opportunities.

See “Segment Operating Results” below for further information by segment. For information regarding product and service operating costs and expenses, see “Product and Service Analysis” below.

Federal and Foreign Income Taxes

Current Quarter

The second quarter 2023 ETR of 17.7 percent was comparable with the prior year period and reflects higher interest expense on unrecognized tax benefits, offset by favorable returns on tax-exempt marketable securities. See Note 3 to the financial statements for additional information.

Year to Date

The year to date 2023 ETR decreased to 16.7 percent from 17.1 percent in the prior year period principally due to higher current year ETR benefits associated with research credits and FDII deductions as well as favorable returns on tax-exempt marketable securities, partially offset by higher interest expense on unrecognized tax benefits. See Note 3 to the financial statements for additional information.

Net Earnings

Current Quarter

Second quarter 2023 net earnings decreased $134 million, or 14 percent, primarily due to a $244 million reduction in the non-operating FAS pension benefit, partially offset by a $51 million increase in returns on marketable securities related to our non-qualified benefit plans, higher operating income, higher interest income on short-term investments and lower income tax expense.

Year to Date

Year to date 2023 net earnings decreased $247 million, or 13 percent, primarily due to a $488 million reduction in the non-operating FAS pension benefit, partially offset by an $84 million increase in returns on marketable securities related to our non-qualified benefit plans, higher operating income, lower income tax expense and higher interest income on short-term investments.

Diluted Earnings Per Share

Current Quarter

Second quarter 2023 diluted earnings per share decreased 12 percent, reflecting a 14 percent decrease in net earnings and a 2 percent reduction in weighted-average diluted shares outstanding.

Year to Date

Year to date 2023 diluted earnings per share decreased 11 percent, reflecting a 13 percent decrease in net earnings and a 2 percent reduction in weighted-average diluted shares outstanding.

NORTHROP GRUMMAN CORPORATION

SEGMENT OPERATING RESULTS

Basis of Presentation

The company is aligned in four operating sectors, which also comprise our reportable segments: Aeronautics Systems, Defense Systems, Mission Systems and Space Systems. We present our sectors in the following business areas, which are reported in a manner reflecting core capabilities:

Aeronautics Systems	Defense Systems	Mission Systems	Space Systems
Autonomous Systems	Battle Management & Missile Systems	Airborne Multifunction Sensors	Launch & Strategic Missiles
Manned Aircraft	Mission Readiness	Maritime/Land Systems & Sensors	Space
		Navigation, Targeting & Survivability	
		Networked Information Solutions	

This section discusses segment sales, operating income and operating margin rates. In evaluating segment operating performance, we look primarily at changes in sales and operating income. Where applicable, significant fluctuations in operating performance attributable to individual contracts or programs, or changes in a specific cost element across multiple contracts, are described in our analysis. Based on this approach and the nature of our operations, the discussion of results of operations below first focuses on our four segments before distinguishing between products and services. Changes in sales are generally described in terms of volume, while changes in margin rates are generally described in terms of performance and/or contract mix. For purposes of this discussion, volume generally refers to increases or decreases in sales or cost from production/service activity levels and performance generally refers to non-volume related changes in profitability. Contract mix generally refers to changes in the ratio of contract type and/or lifecycle (e.g., cost-type, fixed-price, development, production, and/or sustainment).

Segment Operating Income and Margin Rate

Segment operating income, as reconciled in the table below, and segment operating margin rate (segment operating income divided by sales) are non-GAAP measures that reflect the combined operating income of our four segments less the operating income associated with intersegment sales. Segment operating income includes pension expense allocated to our sectors under FAR and CAS and excludes FAS pension service expense and unallocated corporate items (certain corporate-level expenses, which are not considered allowable or allocable under applicable FAR and CAS requirements, and costs not considered part of management's evaluation of segment operating performance). These non-GAAP measures may be useful to investors and other users of our financial statements as supplemental measures in evaluating the financial performance and operational trends of our sectors. These measures may not be defined and calculated by other companies in the same manner and should not be considered in isolation or as alternatives to operating results presented in accordance with GAAP.

	Three Months Ended June 30		%	Six Months Ended June 30		%
$ in millions	**2023**	2022	**Change**	**2023**	2022	**Change**
Operating income	**$ 967**	$ 954	**1 %**	**$ 1,914**	$ 1,851	**3 %**
Operating margin rate	***10.1 %***	*10.8 %*		***10.1 %***	*10.5 %*	
Reconciliation to segment operating income:						
CAS pension expense	**(38)**	(41)	**(7)%**	**(76)**	(87)	**(13)%**
FAS pension service expense	**59**	92	**(36)%**	**118**	184	**(36)%**
FAS/CAS operating adjustment	**21**	51	**(59)%**	**42**	97	**(57)%**
Intangible asset amortization and PP&E step-up depreciation	**31**	61	**(49)%**	**61**	121	**(50)%**
Other unallocated corporate expense	**33**	7	**371 %**	**37**	41	**(10)%**
Unallocated corporate expense	**64**	68	**(6)%**	**98**	162	**(40)%**
Segment operating income	**$ 1,052**	$ 1,073	**(2)%**	**$ 2,054**	$ 2,110	**(3)%**
Segment operating margin rate	***11.0 %***	*12.2 %*		***10.9 %***	*12.0 %*	

Current Quarter

Second quarter 2023 segment operating income decreased $21 million, or 2 percent. Higher sales were more than offset by a lower segment operating margin rate, which reflects a $36 million unfavorable EAC adjustment on the Habitation and Logistics Outpost (HALO) program at Space Systems. In addition, the prior year period includes a $38 million gain on a property sale at Aeronautics Systems and a $33 million benefit recognized in connection with a contract-related legal matter at Mission Systems.

Year to Date
Year to date 2023 segment operating income decreased $56 million, or 3 percent. Higher sales were more than offset by a lower segment operating margin rate, which reflects an approximately $50 million reduction related to higher projected CAS pension costs on the company’s fixed price contracts, as well as the $36 million unfavorable EAC adjustment on the HALO program described above. In addition, the prior year period includes a $67 million favorable EAC adjustment on the EMD phase of the B-21 program at Aeronautics Systems, as well as the $38 million gain on a property sale and $33 million benefit recognized in connection with a contract-related legal matter described above.

FAS/CAS Operating Adjustment
Second quarter 2023 and year to date 2023 FAS/CAS operating adjustment decreased primarily due to lower FAS pension service expense resulting from changes in certain actuarial assumptions as of December 31, 2022.

Unallocated Corporate Expense
Current Quarter
The decrease in second quarter 2023 unallocated corporate expense is primarily due to lower intangible asset amortization and PP&E step-up depreciation, partially offset by a loss recognized in connection with a pending divestiture of a small international subsidiary.

Year to Date
The decrease in year to date 2023 unallocated corporate expense is primarily due to lower intangible asset amortization and PP&E step-up depreciation as well as a reduction in unallowable corporate costs.

Net EAC Adjustments - We record changes in estimated contract earnings at completion (net EAC adjustments) using the cumulative catch-up method of accounting. Net EAC adjustments can have a significant effect on segment operating income; the aggregate amounts are presented in the table below:

	Three Months Ended June 30		Six Months Ended June 30	
$ in millions	**2023**	2022	**2023**	2022
Favorable EAC adjustments	**$ 324**	$ 317	**$ 650**	$ 674
Unfavorable EAC adjustments	**(248)**	(225)	**(528)**	(409)
Net EAC adjustments	**$ 76**	$ 92	**$ 122**	$ 265

Net EAC adjustments by segment are presented in the table below:

	Three Months Ended June 30		Six Months Ended June 30	
$ in millions	**2023**	2022	**2023**	2022
Aeronautics Systems	**$ 42**	$ (9)	**$ 36**	$ 94
Defense Systems	**20**	50	**47**	75
Mission Systems	**38**	29	**95**	86
Space Systems	**(22)**	31	**(54)**	23
Eliminations	**(2)**	(9)	**(2)**	(13)
Net EAC adjustments	**$ 76**	$ 92	**$ 122**	$ 265

For purposes of the discussion in the remainder of this Segment Operating Results section, references to operating income and operating margin rate reflect segment operating income and segment operating margin rate, respectively.

AERONAUTICS SYSTEMS	Three Months Ended June 30		%	Six Months Ended June 30		%
$ in millions	**2023**	2022	**Change**	**2023**	2022	**Change**
Sales	**$ 2,595**	$ 2,534	**2 %**	**$ 5,110**	$ 5,237	**(2)%**
Operating income	**278**	258	**8 %**	**515**	565	**(9)%**
Operating margin rate	***10.7 %***	*10.2 %*		***10.1 %***	*10.8 %*	

Sales

Current Quarter

Second quarter 2023 sales increased $61 million, or 2 percent, due to higher volume in both Manned Aircraft and Autonomous Systems. Higher sales on restricted programs were partially offset by lower volume on E-2 and F/A-18, as well as the Joint Surveillance and Target Attack Radar System (JSTARS) program as it nears completion.

Year to Date

Year to date 2023 sales decreased $127 million, or 2 percent, due to lower volume in both Manned Aircraft and Autonomous Systems, including a $146 million decrease on the E-2 program and lower volume on F/A-18, JSTARS and Global Hawk. These decreases were partially offset by higher volume on restricted programs.

Operating Income

Current Quarter

Second quarter 2023 operating income increased $20 million, or 8 percent, due to higher sales and a higher operating margin rate. Operating margin rate increased to 10.7 percent from 10.2 percent primarily due to higher net favorable EAC adjustments on restricted work, partially offset by a $38 million gain on a property sale in the prior year.

Year to Date

Year to date 2023 operating income decreased $50 million, or 9 percent, due to a lower operating margin rate and lower sales. Operating margin rate decreased to 10.1 percent from 10.8 percent primarily due to lower net EAC adjustments, largely driven by a $67 million favorable EAC adjustment on the EMD phase of the B-21 program in the prior year, as well as a $38 million gain on a property sale in the prior year.

DEFENSE SYSTEMS	Three Months Ended June 30		%	Six Months Ended June 30		%
$ in millions	**2023**	2022	**Change**	**2023**	2022	**Change**
Sales	**$ 1,420**	$ 1,294	**10 %**	**$ 2,796**	$ 2,577	**8 %**
Operating income	**166**	168	**(1)%**	**326**	323	**1 %**
Operating margin rate	***11.7 %***	*13.0 %*		***11.7 %***	*12.5 %*	

Sales

Current Quarter

Second quarter 2023 sales increased $126 million, or 10 percent, due to higher volume in both business areas. Battle Management & Missile Systems sales increased primarily due to higher volume on ammunition programs and the Integrated Air and Missile Defense Battle Command System (IBCS), Hypersonic Attack Cruise Missile (HACM) and advanced fuze programs. Mission Readiness sales increased principally due to higher volume on the NATO Alliance Ground Surveillance In-Service Support (NATO AGS ISS) program and an international training program.

Year to Date

Year to date 2023 sales increased $219 million, or 8 percent, due to higher volume in both business areas. Battle Management & Missile Systems sales increased primarily due to higher volume on ammunition, IBCS, advanced fuze and HACM programs. Mission Readiness sales increased primarily due to higher volume on an international training program.

Operating Income

Current Quarter

Second quarter 2023 operating income decreased $2 million, or 1 percent, due to a lower operating margin rate, which more than offset higher sales. Operating margin rate decreased to 11.7 percent from 13.0 percent primarily due to lower net EAC adjustments.

Year to Date

Year to date 2023 operating income increased $3 million, or 1 percent, due to higher sales, partially offset by a lower operating margin rate. Operating margin rate decreased to 11.7 percent from 12.5 percent primarily due to lower net EAC adjustments.

MISSION SYSTEMS	Three Months Ended June 30		%	Six Months Ended June 30		%
$ in millions	**2023**	2022	**Change**	**2023**	2022	**Change**
Sales	**$ 2,641**	$ 2,516	**5 %**	**$ 5,204**	$ 5,013	**4 %**
Operating income	**401**	413	**(3)%**	**761**	798	**(5)%**
Operating margin rate	***15.2 %***	*16.4 %*		***14.6 %***	*15.9 %*	

Sales

Current Quarter

Second quarter 2023 sales increased $125 million, or 5 percent, primarily due to higher restricted sales in the Networked Information Solutions business area, as well as higher volume on marine systems programs and the Surface Electronic Warfare Improvement Program (SEWIP). These increases were partially offset by lower volume on the Ground/Air Task Oriented Radar (G/ATOR) program.

Year to Date

Year to date 2023 sales increased $191 million, or 4 percent, primarily due to higher restricted sales in the Networked Information Solutions business area, as well as higher volume on SEWIP and marine systems programs, partially offset by lower volume on G/ATOR.

Operating Income

Current Quarter

Second quarter 2023 operating income decreased $12 million, or 3 percent, due to a lower operating margin rate, which more than offset higher sales. Operating margin rate decreased to 15.2 percent from 16.4 percent primarily due to a prior year $33 million benefit recognized in connection with a contract-related legal matter, as well as changes in contract mix toward more cost-type content.

Year to Date

Year to date 2023 operating income decreased $37 million, or 5 percent, due to a lower operating margin rate, which more than offset higher sales. Operating margin rate decreased to 14.6 percent from 15.9 percent primarily due to the prior year $33 million benefit recognized in connection with a contract-related legal matter described above, as well as changes in contract mix toward more cost-type content and a first quarter 2023 loss recognized in connection with an unconsolidated joint venture.

SPACE SYSTEMS	Three Months Ended June 30		%	Six Months Ended June 30		%
$ in millions	**2023**	2022	**Change**	**2023**	2022	**Change**
Sales	**$ 3,488**	$ 2,979	**17 %**	**$ 6,838**	$ 5,834	**17 %**
Operating income	**283**	310	**(9)%**	**596**	571	**4 %**
Operating margin rate	***8.1 %***	*10.4 %*		***8.7 %***	*9.8 %*	

Sales

Current Quarter

Second quarter 2023 sales increased $509 million, or 17 percent, due to higher volume in both business areas. Launch & Strategic Missiles sales increased primarily due to ramp-up on development programs, including a $156 million increase on the Ground Based Strategic Deterrent (GBSD) program and higher volume on the Next Generation Interceptor (NGI) and Ground-based Midcourse Defense Weapon Systems (GWS) programs. Sales in the Space business area increased primarily due to higher volume on restricted programs, the Next-Generation Overhead Persistent Infrared Polar (NextGen Polar) program and the Space Development Agency (SDA) Tranche 1 Tracking Layer program. These increases were partially offset by lower volume for Commercial Resupply Services (CRS) missions.

Year to Date

Year to date 2023 sales increased $1.0 billion, or 17 percent, due to higher volume in both business areas. Launch & Strategic Missiles sales increased primarily due to ramp-up on development programs, including a $316 million increase on GBSD, a $152 million increase on NGI and a $112 million increase on GWS. Sales in the Space business area increased primarily due to higher volume on restricted programs, a $173 million increase on the NextGen Polar program and a $132 million increase on the SDA Tranche 1 Tracking Layer program. These increases were partially offset by a $124 million decrease for Commercial Resupply Services (CRS) missions and lower volume on the HALO program.

Operating Income

Current Quarter

Second quarter 2023 operating income decreased $27 million, or 9 percent, due to a lower operating margin rate, which more than offset higher sales. Operating margin rate decreased to 8.1 percent from 10.4 percent primarily due to lower net EAC adjustments, including a $36 million unfavorable EAC adjustment on the HALO program largely due to cost growth stemming from evolving Lunar Gateway architecture and mission requirements combined with macroeconomic challenges, and a $15 million write-down of commercial inventory.

Year to Date

Year to date 2023 operating income increased $25 million, or 4 percent, due to higher sales, partially offset by a lower operating margin rate. Operating margin rate decreased to 8.7 percent from 9.8 percent primarily due to lower net EAC adjustments, partially offset by a first quarter 2023 benefit recognized on the sale of a license to a customer.

NORTHROP GRUMMAN CORPORATION

PRODUCT AND SERVICE ANALYSIS

The following table presents product and service sales and operating costs and expenses by segment:

	Three Months Ended June 30				Six Months Ended June 30			
$ in millions	**2023**		2022		**2023**		2022	
Segment Information:	**Sales**	**Operating Costs and Expenses**	Sales	Operating Costs and Expenses	**Sales**	**Operating Costs and Expenses**	Sales	Operating Costs and Expenses
Aeronautics Systems								
Product	**$ 1,925**	**$ 1,726**	$ 1,916	$ 1,733	**$ 3,832**	**$ 3,466**	$ 3,961	$ 3,537
Service	**606**	**533**	560	497	**1,149**	**1,013**	1,153	1,030
Intersegment eliminations	**64**	**58**	58	46	**129**	**116**	123	105
Total Aeronautics Systems	**2,595**	**2,317**	2,534	2,276	**5,110**	**4,595**	5,237	4,672
Defense Systems								
Product	**691**	**602**	598	515	**1,369**	**1,200**	1,208	1,042
Service	**534**	**480**	522	457	**1,063**	**948**	996	882
Intersegment eliminations	**195**	**172**	174	154	**364**	**322**	373	330
Total Defense Systems	**1,420**	**1,254**	1,294	1,126	**2,796**	**2,470**	2,577	2,254
Mission Systems								
Product	**1,834**	**1,573**	1,748	1,473	**3,649**	**3,136**	3,510	2,982
Service	**524**	**429**	509	412	**1,035**	**870**	998	808
Intersegment eliminations	**283**	**238**	259	218	**520**	**437**	505	425
Total Mission Systems	**2,641**	**2,240**	2,516	2,103	**5,204**	**4,443**	5,013	4,215
Space Systems								
Product	**2,991**	**2,770**	2,517	2,250	**5,862**	**5,379**	4,941	4,445
Service	**471**	**411**	431	391	**918**	**811**	831	762
Intersegment eliminations	**26**	**24**	31	28	**58**	**52**	62	56
Total Space Systems	**3,488**	**3,205**	2,979	2,669	**6,838**	**6,242**	5,834	5,263
Segment Totals								
Total Product	**$ 7,441**	**$ 6,671**	$ 6,779	$ 5,971	**$ 14,712**	**$ 13,181**	$ 13,620	$ 12,006
Total Service	**2,135**	**1,853**	2,022	1,757	**4,165**	**3,642**	3,978	3,482
Total Segment[1]	**$ 9,576**	**$ 8,524**	$ 8,801	$ 7,728	**$ 18,877**	**$ 16,823**	$ 17,598	$ 15,488

[1] A reconciliation of segment operating income to total operating income is included in “Segment Operating Results.”

Product Sales and Costs

Current Quarter

Second quarter 2023 product sales increased $662 million, or 10 percent, primarily due to an increase in product sales at Space Systems, Defense Systems and Mission Systems. The increase at Space Systems was principally due to ramp-up on development programs, including GBSD and NGI, as well as higher volume on the SDA Tranche 1 Tracking Layer program. The increase at Defense Systems was primarily due to higher volume on ammunition programs, IBCS, HACM and advanced fuze programs. The increase at Mission Systems was primarily driven by higher volume on restricted programs.

Second quarter 2023 product costs increased $700 million, or 12 percent, consistent with the higher product sales described above and reflect a lower operating margin rate principally due to lower net EAC adjustments on Space Systems production programs, including the $36 million unfavorable EAC adjustment on the HALO program described above.

Year to Date
Year to date 2023 product sales increased $1.1 billion, or 8 percent, primarily due to an increase in product sales at Space Systems. The increase at Space Systems was driven by ramp-up on development programs, including GBSD and NGI, and higher volume on restricted programs, GWS, NextGen Polar and the SDA Tranche 1 Tracking Layer program.

Year to date 2023 product costs increased $1.2 billion, or 10 percent, consistent with the higher product sales described above and reflect a lower operating margin rate principally due to lower net EAC adjustments on Space Systems and Aeronautics Systems production programs.

Service Sales and Costs
Current Quarter
Second quarter 2023 service sales increased $113 million, or 6 percent, primarily due to an increase in service sales at Aeronautics Systems and Space Systems. The increase at Aeronautics Systems was principally due to higher sales on restricted programs, partially offset by lower volume on the JSTARS program as it nears completion. The increase at Space Systems was primarily driven by higher volume on restricted programs.

Second quarter 2023 service costs increased $96 million, or 5 percent, consistent with the higher service sales described above.

Year to Date
Year to date 2023 service sales increased $187 million, or 5 percent, primarily due to an increase in service sales at Space Systems and Defense Systems. The increase at Space Systems was principally due to higher volume on restricted programs, the Specialized Warfighter Development Contract (SWDC) and the ICBM Ground Subsystem Support program. The increase at Defense Systems was primarily driven by higher volume on an international training program.

Year to date 2023 service costs increased $160 million, or 5 percent, consistent with the higher service sales described above.

BACKLOG

Backlog consisted of the following as of June 30, 2023 and December 31, 2022:

	June 30, 2023			December 31, 2022	
$ in millions	**Funded**	**Unfunded**	**Total Backlog**	Total Backlog	% Change in 2023
Aeronautics Systems	**$ 9,398**	**$ 9,145**	**$ 18,543**	$ 19,397	**(4)%**
Defense Systems	**5,725**	**1,445**	**7,170**	7,515	**(5)%**
Mission Systems	**11,517**	**3,270**	**14,787**	13,875	**7 %**
Space Systems	**11,256**	**27,049**	**38,305**	37,956	**1 %**
Total backlog	**$ 37,896**	**$ 40,909**	**$ 78,805**	$ 78,743	**— %**

New Awards
Second quarter and year to date 2023 net awards totaled $10.9 billion and $18.9 billion, respectively, and backlog totaled $78.8 billion. Significant second quarter new awards include $5.4 billion for restricted programs (primarily at Space Systems, Aeronautics Systems and Mission Systems), $0.6 billion for F-35 (primarily at Aeronautics Systems and Mission Systems), $0.3 billion for the Missile Defense Agency's Ballistic Missile Defense System Overhead Persistent Infrared Architecture (BOA) and $0.3 billion for Virginia-Class submarines.

LIQUIDITY AND CAPITAL RESOURCES

We are focused on the efficient conversion of operating income into cash to provide for the company’s material cash requirements, including working capital needs, satisfaction of contractual commitments, funding of our pension and OPB plans, investment in our business through capital expenditures, and shareholder return through dividend payments and share repurchases.

At June 30, 2023, we had $3.4 billion in cash and cash equivalents. We expect cash and cash equivalents and cash generated from operating activities, supplemented by borrowings under credit facilities, commercial paper and/or in the capital markets through our shelf registration with the SEC, if needed, to be sufficient to provide liquidity to the company in the short-term and long-term. The company has a five-year senior unsecured credit facility in an aggregate principal amount of $2.5 billion, and in April 2023, we renewed our one-year $500 million uncommitted credit facility. At June 30, 2023, there were no borrowings outstanding under these credit facilities; however, in May 2023, we issued $779 million in commercial paper, which reduced the amount available for borrowing under our unsecured credit facility. In February 2023, we issued $2.0 billion of unsecured senior notes. We intend to use those proceeds for general corporate purposes, which may include debt repayment (including our 3.25% senior notes due in August 2023), share repurchases and working capital.

COVID-19 and the CARES Act

Section 3610 of the Coronavirus Aid, Relief, and Economic Security Act (the “CARES Act”) authorized the government to reimburse qualifying contractors for certain costs of providing paid leave to employees as a result of COVID-19. The company has sought and may continue to seek recovery for certain COVID-19-related costs under Section 3610 of the CARES Act and through our contract provisions, though it is unclear what funds will be available and how much we will be able to recover. In addition, during 2020, the DoD increased the rate for certain progress payments from 80 percent to 90 percent for costs incurred and work performed on relevant contracts. In July 2023, the DoD reverted back to the 80 percent progress payment rate on prospectively awarded contracts. We do not expect this change will have a material impact on our 2023 cash from operations.

Internal Revenue Code (IRC) Section 174

Beginning in 2022, the Tax Cuts and Jobs Act of 2017 (“TCJA”) eliminated the option to deduct research and development expenditures in the current year and requires taxpayers to amortize them over five years pursuant to IRC Section 174. Our 2022 cash from operations were reduced by approximately $900 million for federal tax payments we made related to Section 174. In the future, Congress may consider legislation that would defer the amortization requirement to later years, possibly with retroactive effect. In the meantime, we expect to continue to make additional federal tax payments based on the current Section 174 tax law, which we estimate will reduce our 2023 cash from operations by approximately $720 million. The impact of Section 174 on our cash from operations depends on the amount of research and development expenditures incurred by the company and whether the IRS issues guidance on the provision which differs from our current interpretation, among other things.

Cash Flow Measures

In addition to our cash position, we consider various cash flow measures in capital deployment decision-making, including cash provided by operating activities and adjusted free cash flow, a non-GAAP measure described in more detail below.

Operating Cash Flow

The table below summarizes key components of cash provided by (used in) operating activities:

	Six Months Ended June 30		%
$ in millions	**2023**	2022	**Change**
Net earnings	**$ 1,654**	$ 1,901	**(13)%**
Non-cash items[1]	**91**	(321)	**(128)%**
Pension and OPB contributions	**(75)**	(71)	**6 %**
Changes in trade working capital	**(1,504)**	(2,261)	**(33)%**
Other, net	**51**	67	**(24)%**
Net cash provided by (used in) operating activities	**$ 217**	$ (685)	**(132)%**

[1] Includes depreciation and amortization, non-cash lease expense, stock based compensation expense, deferred income taxes and net periodic pension and OPB income.

Year to date 2023 net cash provided by operating activities was $217 million compared to net cash used in operating activities of $685 million in the prior year period and reflects improved trade working capital largely driven by increased billings and cash collections.

Adjusted Free Cash Flow

Adjusted free cash flow, as reconciled in the table below, is a non-GAAP measure defined as net cash provided by or used in operating activities, less capital expenditures, plus proceeds from the sale of equipment to a customer (not otherwise included in net cash provided by or used in operating activities) and the after-tax impact of discretionary pension contributions. Adjusted free cash flow includes proceeds from the sale of equipment to a customer as such proceeds were generated in a customer sales transaction. It also includes the after-tax impact of discretionary pension contributions for consistency and comparability of financial performance. This measure may not be defined and calculated by other companies in the same manner. We use adjusted free cash flow as a key factor in our planning for, and consideration of, acquisitions, the payment of dividends and stock repurchases. This non-GAAP measure may be useful to investors and other users of our financial statements as a supplemental measure of our cash performance, but should not be considered in isolation, as a measure of residual cash flow available for discretionary purposes, or as an alternative to operating cash flows presented in accordance with GAAP.

The table below reconciles net cash provided by (used in) operating activities to adjusted free cash flow:

	Six Months Ended June 30		%
$ in millions	**2023**	2022	**Change**
Net cash provided by (used in) operating activities	**$ 217**	$ (685)	**(132)%**
Capital expenditures	**(613)**	(507)	**21 %**
Adjusted free cash flow	**$ (396)**	$ (1,192)	**(67)%**

Year to date 2023 adjusted free cash flow increased $796 million as compared with the same period in 2022 due to higher net cash provided by operating activities, partially offset by an increase in capital expenditures.

Investing Cash Flow

Year to date 2023 net cash used in investing activities increased $144 million as compared with the same period in 2022 principally due to higher capital expenditures.

Financing Cash Flow

Year to date 2023 net cash provided by financing activities was $1.2 billion compared to net cash used in financing activities of $1.2 billion in the prior year period principally due to the issuance of $2.0 billion in long-term debt and net borrowings on commercial paper of $768 million, partially offset by a $291 million increase in share repurchases.

Credit Facilities, Commercial Paper and Financial Arrangements - See Note 6 to the financial statements for further information on our credit facilities, commercial paper and our use of standby letters of credit and guarantees.

Share Repurchases - See Note 2 to the financial statements for further information on our share repurchase programs.

Long-term Debt - See Note 4 to the financial statements for further information.

CRITICAL ACCOUNTING POLICIES, ESTIMATES AND JUDGMENTS

There have been no material changes to our critical accounting policies, estimates or judgments from those discussed in our 2022 Annual Report on Form 10-K.

ACCOUNTING STANDARDS UPDATES

See Note 1 to our financial statements for further information on accounting standards updates.

FORWARD-LOOKING STATEMENTS AND PROJECTIONS

This Form 10-Q and the information we are incorporating by reference contain statements that constitute “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as “will,” “expect,” “anticipate,” “intend,” “may,” “could,” “should,” “plan,” “project,” “forecast,” “believe,” “estimate,” “guidance,” “outlook,” “trends,” “goals” and similar expressions generally identify these forward-looking statements. Forward-looking statements include, among other things, statements relating to our future financial condition, results of operations and/or cash flows. Forward-looking statements are based upon assumptions, expectations, plans and projections that we believe to be reasonable when made, but which may change over time. These statements are not guarantees of future performance and inherently involve a wide range of risks and uncertainties that are difficult to predict. Specific risks that could cause actual results to differ materially from those expressed or implied in these forward-looking statements include, but are not limited to, those identified and discussed more fully in the section entitled “Risk Factors” in our 2022 Annual Report on Form 10-K and from time to time in our other filings with the Securities and Exchange Commission (SEC). These risks and uncertainties are amplified by the global macroeconomic, health, security and political environments, including inflationary pressures, labor and supply chain challenges and COVID-19, which have caused and will continue to cause significant challenges, instability and uncertainty. They include:

Industry and Economic Risks

- our dependence on the U.S. government for a substantial portion of our business
- significant delays or reductions in appropriations and/or for our programs, and U.S. government funding and program support more broadly, including as a result of a prolonged continuing resolution and/or government shutdown, and/or related to hostilities and other global events
- significant delays or reductions in payments as a result of or related to a breach of the debt ceiling
- the use of estimates when accounting for our contracts and the effect of contract cost growth and our efforts to recover or offset such costs and/or changes in estimated contract costs and revenues, including as a result of inflationary pressures, labor shortages, supply chain challenges and/or other macroeconomic factors, and risks related to management's judgments and assumptions in estimating and/or projecting contract revenue and performance which may be inaccurate
- continued pressures from macroeconomic trends, including on costs, schedules, performance and ability to meet expectations
- increased competition within our markets and bid protests

Legal and Regulatory Risks

- investigations, claims, disputes, enforcement actions, litigation (including criminal, civil and administrative) and/or other legal proceedings
- the improper conduct of employees, agents, subcontractors, suppliers, business partners or joint ventures in which we participate, including the impact on our reputation and our ability to do business
- changes in procurement and other laws, SEC, DoD and other rules and regulations, contract terms and practices applicable to our industry, findings by the U.S. government as to our compliance with such requirements, more aggressive enforcement of such requirements and changes in our customers' business practices globally
- environmental matters, including unforeseen environmental costs and government and third party claims
- unanticipated changes in our tax provisions or exposure to additional tax liabilities

Business and Operational Risks

- impacts related to health epidemics and pandemics, including COVID-19
- cyber and other security threats or disruptions faced by us, our customers or our suppliers and other partners, and changes in related regulations
- our ability to attract and retain a qualified, talented and diverse workforce with the necessary security clearances to meet our performance obligations
- the performance and viability of our subcontractors and suppliers and the availability and pricing of raw materials and components, particularly with inflationary pressures, increased costs, shortages in labor and financial resources, supply chain disruptions, and extended material lead times
- environmental, social and governance matters, including especially climate change, their impacts on our company, our operations and our stakeholders (employees, suppliers, customers, shareholders and regulators), and changes in laws, regulations and priorities related to these issues
- our exposure to additional risks as a result of our international business, including risks related to global security, geopolitical and economic factors, misconduct, suppliers, laws and regulations
- our ability to meet performance obligations under our contracts, including obligations that require innovative design capabilities, are technologically complex, require certain manufacturing expertise or are dependent on factors not wholly within our control
- natural disasters
- products and services we provide related to hazardous and high risk operations, including the production and use of such products, which subject us to various environmental, regulatory, financial, reputational and other risks
- our ability appropriately to exploit and/or protect intellectual property rights

- our ability to develop new products and technologies, progress digital transformation, and maintain technologies, facilities, and equipment to win new competitions and meet the needs of our customers

General and Other Risk Factors

- the adequacy and availability of, and ability to obtain, insurance coverage, customer indemnifications or other liability protections
- the future investment performance of plan assets, gains or losses associated with changes in valuation of marketable securities related to our non-qualified benefit plans, changes in actuarial assumptions associated with our pension and other postretirement benefit plans and legislative or other regulatory actions impacting our pension and postretirement benefit obligations
- changes in business conditions that could impact business investments and/or recorded goodwill or the value of other long-lived assets, and other potential future liabilities

We urge you to consider the limitations on, and risks associated with, forward-looking statements and not unduly rely on the accuracy of forward-looking statements. These forward-looking statements speak only as of the date this report is first filed or, in the case of any document incorporated by reference, the date of that document. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

There have been no material changes to our market risks from those discussed in our 2022 Annual Report on Form 10-K.

Item 4. Controls and Procedures

DISCLOSURE CONTROLS AND PROCEDURES

Our principal executive officer (Chair, Chief Executive Officer and President) and principal financial officer (Corporate Vice President and Chief Financial Officer) have evaluated the company’s disclosure controls and procedures (as defined in Rule 13a-15(e) and Rule 15d-15(e) of the Securities Exchange Act of 1934 (the Exchange Act)) as of June 30, 2023, and have concluded that these controls and procedures are effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms. These disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in the reports that we file or submit is accumulated and communicated to management, including the principal executive officer and the principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING

During the three months ended June 30, 2023, no changes occurred in our internal control over financial reporting that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

We have provided information about certain legal proceedings in which we are involved in Notes 5 and 6 to the financial statements.

We are a party to various investigations, lawsuits, arbitration, claims, enforcement actions and other legal proceedings, including government investigations and claims, that arise in the ordinary course of our business. These types of matters could result in administrative, civil or criminal fines, penalties or other sanctions (which terms include judgments or convictions and consent or other voluntary decrees or agreements); compensatory, treble or other damages; non-monetary relief or actions; or other liabilities. Government regulations provide that certain allegations against a contractor may lead to suspension or debarment from future government contracts or suspension of export privileges for the company or one or more of its components. The nature of legal proceedings is such that we cannot assure the outcome of any particular matter. For additional information on pending matters, please see Notes 5 and 6 to the financial statements, and for further information on the risks we face from existing and future investigations, lawsuits, arbitration, claims, enforcement actions and other legal proceedings, please see "Risk Factors" in our 2022 Annual Report on Form 10-K.

Consistent with SEC Regulation S-K Item 103, we have elected to disclose those environmental proceedings with a governmental entity as a party where the company reasonably believes such proceeding would result in monetary sanctions, exclusive of interest and costs, of $1.0 million or more.

Item 1A. Risk Factors

For a discussion of our risk factors please see the section entitled "Risk Factors" in our 2022 Annual Report on Form 10-K.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

The table below summarizes our repurchases of common stock during the three months ended June 30, 2023.

Period	Total Number of Shares Purchased	Average Price Paid per Share(1)(2)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased under the Plans or Programs ($ in millions)
April 1, 2023 - April 28, 2023	310,435	NM(2)	310,435	$ 1,851
April 29, 2023 - May 26, 2023	187,883	$ 442.25	187,883	1,768
May 27, 2023 - June 30, 2023	130,374	$ 447.76	130,374	1,710
Total	628,692	NM(2)	628,692	$ 1,710

(1) Includes commissions paid.

(2) During the first quarter of 2023, the company entered into an accelerated share repurchase (ASR) agreement with Bank of America, N.A., which was completed on April 27, 2023. Pursuant to the terms of the ASR, a total of approximately 1.1 million shares of our common stock were repurchased with an average final purchase price of $458.28 (0.9 million shares in February 2023 and 0.2 million shares in April 2023).

Share repurchases take place from time to time, subject to market conditions and management's discretion, in the open market or in privately negotiated transactions. The company retires its common stock upon repurchase and, in the periods presented, has not made any purchases of common stock other than in connection with these publicly announced repurchase programs.

See Note 2 to the financial statements for further information on our share repurchase programs.

Item 5. Other Information

Consistent with Item 408 of Regulation S-K, the following table reflects Rule 10b5-1 trading arrangements and non-Rule 10b5-1 trading arrangements (as defined in Item 408) entered into during the quarter ended June 30, 2023.

Name (Title)	Type of Trading Arrangement	Date of Adoption or Termination	Expiration Date of Trading Arrangement	Aggregate Number of Securities to Be Purchased or Sold
Michael A. Hardesty (Corporate Vice President, Controller and Chief Accounting Officer)	Rule 10b5-1 Trading Arrangement	May 3, 2023	Until May 1, 2024 or such earlier date upon the completion of all trades under the plan (or the expiration of the orders relating to such trades without execution) or the occurrence of such other termination events as specified in the plan.	Sale of 140 shares of common stock Sale of shares to be received upon payout of 2021 RPSRs and RSRs[(1)] Gift of up to 800 shares of common stock

[(1)] The aggregate number of shares to be sold will depend, in part, on future company performance.

NORTHROP GRUMMAN CORPORATION

Item 6. Exhibits

3.1	Amended and Restated Certificate of Incorporation of Northrop Grumman Corporation dated May 17, 2023 (incorporated by reference to Exhibit 3.1 to Form 8-K, filed May 19, 2023, File No. 001-16411)
3.2	Amended and Restated Bylaws of Northrop Grumman Corporation dated May 17, 2023 (incorporated by reference to Exhibit 3.2 to Form 8-K filed May 19, 2023, File No. 001-16411)
*+10.1	Non-Employee Director Compensation Term Sheet, effective May 17, 2023
*+10.2	Northrop Grumman Savings Excess Plan (Amended and Restated Effective as of July 1, 2023)
*15	Letter from Independent Registered Public Accounting Firm
*31.1	Certification of Kathy J. Warden pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
*31.2	Certification of David F. Keffer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
**32.1	Certification of Kathy J. Warden pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
**32.2	Certification of David F. Keffer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
*101	Northrop Grumman Corporation Quarterly Report on Form 10-Q for the quarter ended June 30, 2023, formatted as inline XBRL (Extensible Business Reporting Language): (i) the Cover Page, (ii) Condensed Consolidated Statements of Earnings and Comprehensive Income, (iii) Condensed Consolidated Statements of Financial Position, (iv) Condensed Consolidated Statements of Cash Flows, (v) Condensed Consolidated Statements of Changes in Shareholders' Equity, and (vi) Notes to Condensed Consolidated Financial Statements. The instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
*104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

+	Management contract or compensatory plan or arrangement
*	Filed with this report
**	Furnished with this report

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

NORTHROP GRUMMAN CORPORATION
(Registrant)

By: **/s/ Michael A. Hardesty**

Michael A. Hardesty
Corporate Vice President, Controller and
Chief Accounting Officer
(Principal Accounting Officer)

Date: July 26, 2023

Fees and Expenses

(effective as of May 17, 2023)

Retainer: Retainer fees are paid quarterly, at the end of each quarter. Fees are as follows:

Annual cash retainer:	$140,000
Additional retainer for Lead Independent Director:	$50,000
Additional retainer for Audit Committee:	$15,000
Additional retainer for Audit Committee chair:	$25,000
Additional retainer for Comp Committee chair:	$25,000
Additional retainer for Gov Committee chair	$25,000
Additional retainer for Policy Committee chair	$25,000

Equity Grant: Directors are awarded an annual equity grant of $175,000 in deferred stock units ("Automatic Stock Units"), awarded annually on the day of the Company's Annual Meeting of Shareholders. The Automatic Stock Units will vest on the one year anniversary of the grant date. Directors may elect to have all or any portion of their Automatic Stock Units paid on (A) the earlier of (i) the beginning of a specified calendar year after the vesting date or (ii) their separation from service as a member of the Board or (B) the vesting date.

Deferral of Cash Retainer: Directors may elect to defer payment of all or a portion of their cash retainer fees and any other committee retainer fees into a deferred stock unit account ("Elective Stock Units"). Elective Stock Units are awarded on a calendar quarterly basis. Directors may elect to have all or a portion of their Elective Stock Units paid on the earlier of (i) the beginning of a specified calendar year or (ii) their separation from service as a member of the Board.

Elective Deferral Program: Directors may elect to defer to a later year all or a portion of their annual cash retainer and any other fees payable for their Board service into alternative investment options similar to the options available under Northrop Grumman's Savings Excess Plan.

Stock Ownership: All directors are required to own Company stock in an amount equal to five times the annual cash retainer, with such ownership to be achieved within five years of the director's election to the Board. Deferred stock units and Company stock owned outright by the director will count towards this requirement.

Expenses: <u>Transportation</u>

Ordinary and necessary business expenses will be reimbursed to traveling directors after presentation of original receipts to the company. Directors will be reimbursed for round trip first class air travel from the director's regular place of business or residence. Whenever possible, directors will be transported to board meetings by our own company aircraft. Surface travel will be reimbursed at the current mileage allowance for traveling executives. Taxi service will be reimbursed upon presentation of a receipt. Northrop Grumman arranges drivers from an executive security service to transport directors between the airport and the hotel currently in use and Northrop Grumman drivers transport directors from the hotel to the meeting location.

<u>Hotels</u>

The Corporate Secretary's office will make hotel arrangements for directors in connection with the board and committee meetings. Drivers are available to transport directors to the board and committee meetings. Directors may bill their room charges directly to the Northrop Grumman master account that has been established for director visits.

NORTHROP GRUMMAN
SAVINGS EXCESS PLAN

(Amended and Restated Effective as of July 1, 2023)

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INTRODUCTION

The Northrop Grumman Savings Excess Plan (the "Plan") is hereby amended and restated effective July 1, 2023. This restatement amends the January 1, 2020 restatement of the Plan. Notwithstanding the foregoing or anything to the contrary in the Plan, this amended and restated Plan document does not affect amounts earned and vested under the Plan prior to 2005.

Northrop Grumman Corporation (the "Company") established this Plan for participants in the Northrop Grumman Savings Plan who exceed the limits under sections 401(a)(17) or 415(c) of the Internal Revenue Code. This Plan is intended (1) to comply with section 409A of the Internal Revenue Code, as amended (the "Code") and official guidance issued thereunder (except with respect to amounts covered by Appendix B), and (2) to be "a plan which is unfunded and is maintained by an employer primarily for the purpose of providing deferred compensation for a select group of management or highly compensated employees" within the meaning of sections 201(2), 301(a)(3) and 401(a)(1) of the Employee Retirement Income Security Act of 1974. Notwithstanding any other provision of this Plan, this Plan shall be interpreted, operated and administered in a manner consistent with these intentions.

ARTICLE I
DEFINITIONS

1.1 Definitions

Whenever the following words and phrases are used in this Plan, with the first letter capitalized, they shall have the meanings specified below.

(a) "Account" shall mean the recordkeeping account set up for each Participant to keep track of amounts to his or her credit.

(b) "Administrative Committee" means the committee in charge of Plan administration, as described in Article VII and Appendix D.

(c) "Affiliated Companies" shall mean the Company and any entity affiliated with the Company under Code sections 414(b) or (c).

(d) "Base Salary" shall mean a Participant's annual base salary, excluding bonuses, commissions, incentive and all other remuneration for services rendered to the Affiliated Companies and prior to reduction for any salary contributions to a plan established pursuant to section 125 of the Code or qualified pursuant to section 401(k) of the Code.

(e) "Beneficiary" or "Beneficiaries" shall mean the person or persons, including a trustee, personal representative or other fiduciary, last designated in writing by a Participant in accordance with procedures established by the Administrative Committee to receive the benefits specified hereunder in the event of the Participant's death.

(1) No Beneficiary designation shall become effective until it is filed with the Administrative Committee.

(2) Any designation shall be revocable at any time through a written instrument filed by the Participant with the Administrative Committee with or without the consent of the previous Beneficiary.

No designation of a Beneficiary other than the Participant's spouse shall be valid unless consented to in writing by such spouse. If there is no such designation or if there is no surviving designated Beneficiary, then the Participant's surviving spouse shall be the Beneficiary. If there is no surviving spouse to receive any benefits payable in accordance with the preceding sentence, the duly appointed and currently acting personal representative of the Participant's estate (which shall include either the Participant's probate estate or living trust) shall be the Beneficiary. In any case where there is no such personal representative of the Participant's estate duly appointed and acting in that capacity within 90 days after the Participant's death (or such extended period as the Administrative Committee determines is reasonably necessary to allow such personal representative to be appointed, but not to exceed 180 days after the Participant's death), then Beneficiary shall mean the person or persons who can verify by affidavit or court order to the satisfaction of the Administrative Committee that they are legally entitled to receive the benefits specified hereunder. Any payment made pursuant to such determination shall constitute a full release and discharge of the Plan, the Administrative Committee and the Company. Effective January 1, 2007, a Participant will automatically revoke a designation of a spouse as primary beneficiary upon the dissolution of their marriage.

(3) In the event any amount is payable under the Plan to a minor, payment shall not be made to the minor, but instead be paid (a) to that person's living parent(s) to act as custodian, (b) if that person's parents are then divorced, and one parent is the sole custodial parent, to such custodial parent, or (c) if no parent of that person is then living, to a custodian selected by the Administrative Committee to hold the funds for the minor under the Uniform Transfers or Gifts to Minors Act in effect in the jurisdiction in which the minor resides. If no parent is living and the Administrative Committee decides not to select another custodian to hold the funds for the minor, then payment shall be made to the duly appointed and currently acting guardian of the estate for the minor or, if no guardian of the estate for the minor is duly appointed and currently acting within 60 days after the date the amount becomes payable, payment shall be deposited with the court having jurisdiction over the estate of the minor. Any payment made pursuant to such determination shall constitute a full release and discharge of the Plan, the Administrative Committee and the Company.

(4) Payment by the Affiliated Companies pursuant to any unrevoked Beneficiary designation, or to the Participant's estate if no such designation exists, of all benefits owed hereunder shall terminate any and all liability of the Affiliated Companies.

(f) "Board" shall mean the Board of Directors of the Company.

(g) "Bonuses" shall mean the bonuses earned under the Company's formal incentive plans as defined by the Administrative Committee.

(h) "Code" shall mean the Internal Revenue Code of 1986, as amended.

(i) "Committees" shall mean the Committees appointed as provided in Article VII.

(j) "Company" shall mean Northrop Grumman Corporation and any successor.

(k) "Company Contributions" shall mean contributions by the Company to a Participant's Account.

(l) "Compensation" shall be Compensation as defined by Section 5.01 of the NGSP.

(m) "CPSC Contributions" shall mean the Company contributions under Section 3.2(b)(7).

(n) "CPSC Participant" shall mean an Employee who is eligible to participate in the NGSP, receives Company Profit Sharing Contributions under the NGSP, and is classified by the Affiliated Companies as an Employee and not as an independent contractor.

(o) "CPSC Subaccount" shall mean the portion of a Participant's Account made up of CPSC Contributions and earnings thereon.

(p) "Disability" or "Disabled" shall mean the Participant's inability to perform each and every duty of his or her occupation or position of employment due to illness or injury as determined in the sole and absolute discretion of the Administrative Committee.

(q) "Eligible Compensation" shall mean (1) Compensation prior to January 1, 2009, and (2) after 2008, Base Salary and Bonuses, reduced by the amount of any deferrals made from such amounts under the Northrop Grumman Deferred Compensation Plan. Notwithstanding the foregoing, effective January 1, 2017, Eligible Compensation shall not include any amount paid to an Eligible Employee following the end of the month first following the month in which the Eligible Employee has a Separation from Service. Notwithstanding the foregoing, Eligible Compensation shall not include any amount deferred under the OADCP (as such term is defined in Appendix E) that otherwise would be payable in 2019.

(r) "Eligible Employee" shall mean any Employee who meets the following conditions:

(1) he or she is eligible to participate in the NGSP;

(2) he or she is classified by the Affiliated Companies as an Employee and not as an independent contractor; and

(3) he or she meets any additional eligibility criteria set by the Administrative Committee. Additional eligibility criteria established by the Administrative Committee may include specifying classifications of Employees who are eligible to participate and the date as of which various groups of Employees will be eligible to participate. This includes, for example, Administrative Committee authority to delay eligibility for employees of newly acquired companies who become Employees.

Notwithstanding the foregoing or anything to the contrary in the Plan, and effective as of and contingent upon the Closing, designated employees of Northrop Grumman Innovation Systems, Inc. ("NGIS") who meet the relevant eligibility criteria, shall be eligible to participate in the Plan effective January 1, 2019, and shall be eligible to make an election under Section 3.1 of the Plan during the 2018 Open Enrollment Period to defer Eligible Compensation for the 2019 Plan Year.

(s) "Eligible New Hire" shall mean an Eligible Employee who is first hired by the Company on or after July 1, 2023 and who satisfies the following criteria: (i) is an officer of the Company at or above the rank of Vice President on his or her first day of employment with the Company, (ii) was not eligible to participate in the Plan's annual enrollment process during the year of hire, and (iii) whose first day of employment with the Company is before December 1 of the year of hire. Notwithstanding anything herein to the contrary, an Eligible Employee who was previously employed by the Company and is re-hired by the Company shall not be an Eligible New Hire as a result of his or her re-hire.

(t) "Employee" shall mean any common law employee of the Affiliated Companies who is classified as an employee by the Affiliated Companies.

(u) "ERISA" shall mean the Employee Retirement Income Security Act of 1974, as it may be amended from time to time.

(v) "Investment Committee" means the committee in charge of investment aspects of the Plan, as described in Article VII.

(w) "Key Employee" means an employee who on the date of his Separation from Service is treated as a "specified employee" under Code section 409A in accordance with a uniform Company policy.

(x) "NEC Contributions" means the Company contributions under Section 3.2(b)(3) and Section 3.2(b)(6).

(y) "NEC Participant" means an Employee who is eligible to participate in the NGSP, receives Non-Elective Contributions under the NGSP and is classified by the Affiliated Companies as an Employee and not as an independent contractor. An Employee is a NEC Participant for a Plan Year only if the Employee is an Employee on December 31 of the Plan Year for which the NEC Contribution is being made, provided however, that the Employee will also be considered a NEC Participant for such Plan Year if the Employee (1) dies while employed or is laid off or involuntarily terminated other than for cause during the Plan Year for which the NEC Contribution is being made or (2) is performing qualifying military service (as defined in the NGSP) and would receive a Non-Elective Contribution under the NGSP.

(z) "NEC Subaccount" shall mean the portion of a Participant's Account made up of NEC Contributions and earnings thereon.

(aa) "NGSP" means the Northrop Grumman Savings Plan.

(bb) "Open Enrollment Period" means the period designated by the Administrative Committee for electing deferrals for the following Plan Year.

(cc) "Participant" shall mean any Eligible Employee who participates in this Plan in accordance with Article II or any Employee who is a RAC Participant, a NEC Participant, or a CPSC Participant.

(dd) "Participant Contributions" shall have the same meaning as that term is defined in the NGSP.

(ee) "Payment Date" shall mean:

(1) for distributions upon early termination under Section B.1(a), a date after the end of the month in which termination of employment occurs; and

(2) for distributions after Retirement, Disability or death under Section B.1(b), a date after the end of the month in which occurs Retirement, the determination of Disability by the Administrative Committee, or the notification of the Administrative Committee of the Participant's death (or later qualification of the Beneficiary or Beneficiaries), as applicable.

The exact date in each case will be determined by the Administrative Committee to allow time for administrative processing.

(ff) "Plan" shall be the Northrop Grumman Savings Excess Plan.

(gg) "Plan Year" shall be the calendar year.

(hh) "RAC Contributions" shall mean the Company contributions under Section 3.2(b)(2) and Section 3.2(b)(5).

(ii) "RAC Participant" shall mean an Employee who is eligible to participate in the NGSP, receives Retirement Account Contributions under the NGSP, and is classified by the Affiliated Companies as an Employee and not as an independent contractor. Notwithstanding the foregoing, an Employee who becomes eligible to participate in the Officers Supplemental Executive Retirement Program II ("OSERP II") under the Northrop Grumman Supplemental Plan 2 shall immediately cease to be eligible for RAC Contributions. Effective for Plan Years beginning on or after January 1, 2019, an Employee is a RAC Participant for a Plan Year only if the Employee is an Employee on December 31 of the Plan Year for which the RAC Contribution is being made, provided however, that the Employee will also be considered a RAC Participant for such Plan Year if the Employee (1) dies while employed or is laid off or involuntarily terminated other than for cause during the Plan Year for which the RAC Contribution is being made or (2) is performing qualifying military service (as defined in the NGSP) and would receive a Retirement Account Contribution under the NGSP.

(jj) "RAC Subaccount" shall mean the portion of a Participant's Account made up of RAC Contributions and earnings thereon.

(kk) "Retirement" shall mean termination of employment with the Affiliated Companies after reaching age 55.

(ll) "Separation from Service" or "Separates from Service" or "Separating from Service" means a "separation from service" within the meaning of Code section 409A.

ARTICLE II
PARTICIPATION

2.1 In General

(a) An Eligible Employee may become a Participant by complying with the procedures established by the Administrative Committee for enrolling in the Plan. Anyone who becomes an Eligible Employee will be entitled to become a Participant during an Open Enrollment Period. In addition, an Eligible New Hire may become a Participant by filing an election on his or her first day of employment with the Company in accordance with the procedures established by the Administrative Committee for enrolling in the Plan.

(b) A RAC Participant will become a Participant when RAC Contributions are first made to his or her RAC Subaccount.

(c) A NEC Participant will become a Participant when NEC Contributions are first made to his or her NEC Subaccount.

(d) A CPSC Participant will become a Participant when CPSC Contributions are first made to his or her CPSC Subaccount.

(e) An individual will cease to be a Participant when he or she no longer has a positive balance to his or her Account under the Plan.

2.2 Disputes as to Employment Status

(a) Because there may be disputes about an individual's proper status as an Employee or non-Employee, this Section describes how such disputes are to be handled with respect to Plan participation.

(b) The Affiliated Companies will make the initial determination of an individual's employment status.

(1) If an individual is not treated by the Affiliated Companies as a common law employee, then the Plan will not consider the individual to be an "Eligible Employee" and he or she will not be entitled to participate in the Plan.

(2) This will be so even if the individual is told he or she is entitled to participate in the Plan and given a summary of the plan and enrollment forms or other actions are taken indicating that he or she may participate.

(c) Disputes may arise as to an individual's employment status. As part of the resolution of the dispute, an individual's status may be changed by the Affiliated Companies from non-Employee to Employee. Such Employees are not Eligible Employees and will not be entitled to participate in the Plan.

ARTICLE III
DEFERRAL ELECTIONS

3.1 Elections to Defer Eligible Compensation

(a) Timing.

(1) An Eligible Employee who meets the requirements of Section 2.1(a) may elect to defer Eligible Compensation earned in a Plan Year by filing an election in the Open Enrollment Period for the Plan Year. For purposes of determining whether an election filed pursuant to this Section 3.1(a)(1) applies, Eligible Compensation that is Base Salary shall be considered earned in the Plan Year in which, absent such election, it would otherwise be paid. The Open Enrollment Period for Compensation that is Base Salary shall end no later than December 31 of the Plan Year prior to the Plan Year in which the Base Salary is earned. The Open Enrollment Period for Compensation that is Bonus compensation shall end no later than June 30 of the Plan Year in which the performance period for the Bonus ends. An election to participate for a Plan Year is irrevocable.

(2) An Eligible New Hire who meets the requirements of Section 2.1(a) may have a one-time election to defer Base Salary earned in the Plan Year following the Plan Year in which his or her first day of employment occurs by filing an election on such first day of employment. For purposes of determining whether an election filed pursuant to this Section 3.1(a)(2) applies, Base Salary shall be considered earned in the Plan Year in which, absent such election, it would otherwise be paid. In addition, an Eligible New Hire who meets the requirements of Section 2.1(a), and is initially eligible to participate in the Plan within the meaning of Treas. Reg. section 1.409A-2(a)(7) as of his or her first day of employment, may elect to defer Bonus compensation earned in the Plan Year in which his or her first day of employment occurs by filing an election on such first day of employment. Any election to participate in the Plan under this Section 3.1(a)(2) is irrevocable.

(b) Election Rules. An Eligible Employee's election may be made in writing, electronically, or as otherwise specified by the Administrative Committee. Such election shall specify the Eligible Employee's rate of deferral for contributions to the Plan, which shall be between 1% and 50%, and shall address distribution of the deferred amounts as described in Section 6.1. All elections must be made in accordance with the rules, procedures and forms provided by the Administrative Committee. The Administrative Committee may change the rules, procedures and forms from time to time and without prior notice to Participants.

(c) Cancellation of Election. If a Participant becomes disabled (as defined under Code section 409A) during a Plan Year, his deferral election for such Plan Year shall be cancelled.

3.2 Contribution Amounts

(a) Participant Contributions. An Eligible Employee's contributions under the Plan for a Plan Year will begin once his or her Compensation for the Plan Year exceeds the Code section 401(a)(17) limit for the Plan Year. The Participant's elected deferral percentage will be applied to his or her Eligible Compensation for the balance of the Plan Year.

(b) Company Contributions. The Company will make Company Contributions to a Participant's Account as provided in (1), (2), (3), (4), (5), (6) and (7) below.

(1) Matching Contributions. The Company will make a Company Contribution equal to the matching contribution rate for which the Participant is eligible under the NGSP for the Plan Year multiplied by the amount of the Participant's contributions under subsection (a).

(2) RAC Contributions. Effective July 1, 2008, the Company will make RAC Contributions equal to a percentage of a RAC Participant's Compensation for a Plan Year in excess of the Code section 401(a)(17) limit. The percentage used to calculate a RAC Participant's contribution for the 2016 Plan Year and each subsequent Plan Year shall be based on the RAC Participant's age on December 31, 2016 as follows:

(i) Three percent if not yet age 35.

(ii) Four percent if 35 or older, but not yet 50.

(iii) Five percent if age 50 or older.

(3) NEC Contributions. Effective January 1, 2019, the Company will make NEC Contributions equal to a percentage of a NEC Participant's Compensation in excess of the Code section 401(a)(17) limit for the Plan Year. The percentage used to calculate a NEC Participant's NEC Contribution for the 2019 Plan Year and each subsequent Plan Year shall be based on the NEC Participant's age and years of service on December 31 of the Plan Year, as described below:

(i) Two and one half percent if age and years of service are less than 40.

(ii) Three percent if age and years of service are 40 through 59.

(iii) Four percent if age and years of service are at least 60.

For this purpose, years of service shall be calculated in the same manner as for purposes of determining Non-Elective Contributions under the NGSP.

(4) Make-Up Matching Contributions for Contribution Limitation. If an Eligible Employee's Participant Contributions under the NGSP for a Plan Year are limited by the Code section 415(c) contribution limit before the Eligible Employee's Participant Contributions under the NGSP are limited by the Code section 401(a)(17) compensation limit, the Company will make a Company Contribution equal to the amount of matching contributions for which the Eligible Employee would have been eligible under the NGSP were Code section 415(c) not applied, reduced by the actual amount of matching contributions made for the Plan Year under the NGSP.

(5) Make-Up RAC Contributions for Contribution Limitation. If an Eligible Employee is a RAC Participant and his Retirement Account Contributions under the NGSP for a Plan Year are limited by the Code section 415(c) contribution limit before the RAC Participant's Retirement Account Contributions under the NGSP are limited by the Code section 401(a)(17) compensation limit, the Company will make a Company Contribution equal to the amount of Retirement Account Contributions for which the RAC Participant would have been eligible under the NGSP were Code section 415(c) not applied, reduced by the actual amount of Retirement Account Contributions made for the Plan Year under the NGSP.

(6) Make-Up NEC Contributions for Contribution Limitation. If an Eligible Employee is a NEC Participant and his Non-Elective Contributions under the NGSP for a Plan Year are limited by the Code section 415(c) contribution limit before the NEC Participant's Non-Elective Contributions under the NGSP are limited by the Code section 401(a)(17) compensation limit, the Company will make a Company Contribution equal to the amount of Non-Elective Contributions for which the NEC Participant would have been eligible under the NGSP were Code section 415(c) not applied, reduced by the actual amount of Non-Elective Contributions made for the Plan Year under the NGSP.

(7) Make-Up CPSC Contributions for Contribution Limitation. If an Eligible Employee is a CPSC Participant and his Company Profit Sharing Contributions under the NGSP for a Plan Year are limited by the Code section 415(c) contribution limit before the CPSC Participant's Company Profit Sharing Contributions under the NGSP are limited by the Code section 401(a)(17) compensation limit, the Company will make a Company Contribution equal to the amount of Company Profit Sharing Contributions for which the CPSC Participant would have been eligible under the NGSP were Code section 415(c) not applied, reduced by the actual amount of Company Profit Sharing Contributions made for the Plan Year under the NGSP.

3.3 Crediting of Deferrals

Amounts deferred by a Participant under the Plan shall be credited to the Participant's Account as soon as practicable after the amounts would have otherwise been paid to the Participant. Company contributions under Section 3.2(b)(1) will be credited to Accounts as soon as practicable after each payroll cycle in which they accrue. Company contributions under Section 3.2(b)(2), Section 3.2(b)(3), Section 3.2(b)(4), Section 3.2(b)(5), Section 3.2(b)(6) and Section 3.2(b)(7) will be credited annually for each Plan Year within the time prescribed by law, including extensions of time, for filing the Company's federal income tax return for the Plan Year.

3.4 Investment Elections

(a) The Investment Committee will establish a number of different investment funds or other investment options for the Plan. The Investment Committee may change the funds or other investment options from time to time, without prior notice to Participants.

(b) Participants may elect how their future contributions and existing Account balances will be deemed invested in the various investment funds and may change their elections from time to time. If a Participant does not elect how future contributions will be deemed invested, contributions will be deemed invested in the qualified default investment alternative ("QDIA") that applies to the Participant under the NGSP.

(c) The deemed investments for a RAC Participant's RAC Subaccount, the deemed investments for a NEC Participant's NEC Subaccount, and the deemed investments for a CPSC Participant's CPSC Subaccount, must be the same as the deemed investments for the Participant's Company contributions under Section 3.2(b)(1).

(d) Selections of investments, changes and transfers must be made according to the rules and procedures of the Administrative Committee.

(1) The Administrative Committee may prescribe rules that may include, among other matters, limitations on the amounts that may be transferred and procedures for electing transfers.

(2) The Administrative Committee may prescribe valuation rules for purposes of investment elections and transfers. Such rules may, in the Administrative Committee's discretion, use averaging methods to determine values and accrue estimated expenses. The Administrative Committee may change the methods it uses for valuation from time to time.

(3) The Administrative Committee may prescribe the periods and frequency with which Participants may change deemed investment elections and make transfers.

(4) The Administrative Committee may change its rules and procedures from time to time and without prior notice to Participants.

(e) Effective January 13, 2011, Participant investment elections involving a Company stock investment fund (e.g., transfers into or out of the fund) may be restricted, including in accordance with Company policies generally applicable to employee transactions in Company stock.

3.5 Investment Return Not Guaranteed

Investment performance under the Plan is not guaranteed at any level. Participants may lose all or a portion of their contributions due to poor investment performance.

ARTICLE IV
ACCOUNTS

4.1 Accounts

The Administrative Committee shall establish and maintain a recordkeeping Account for each Participant under the Plan.

4.2 Valuation of Accounts

The valuation of Participants' recordkeeping Accounts will reflect earnings, losses, expenses and distributions, and will be made in accordance with the rules and procedures of the Administrative Committee.

(a) The Administrative Committee may set regular valuation dates and times and also use special valuation dates and times and procedures from time to time under unusual circumstances and to protect the financial integrity of the Plan.

(b) The Administrative Committee may use averaging methods to determine values and accrue estimated expenses.

(c) The Administrative Committee may change its valuation rules and procedures from time to time and without prior notice to Participants.

4.3 Use of a Trust

The Company may set up a trust to hold any assets or insurance policies that it may use in meeting its obligations under the Plan. Any trust set up will be a rabbi trust and any assets placed in the trust shall continue for all purposes to be part of the general assets of the Company and shall be available to its general creditors in the event of the Company's bankruptcy or insolvency.

ARTICLE V
VESTING AND FORFEITURES

5.1 In General

A Participant's interest in his or her Account will be nonforfeitable, subject to the exceptions in Section 5.2.

5.2 Exceptions

The following exceptions apply to the vesting rule in Section 5.1 above:

(a) A RAC Participant, a NEC Participant and a CPSC Participant shall become fully vested in his or her RAC Subaccount, NEC Subaccount or CPSC Subaccount (as applicable) and earnings thereon upon the earliest of the following dates, provided he or she is an Employee at such time: (i) the date he or she completes three years of service, (ii) the date of his or her 65th birthday, (iii) the date of his or her death, (iv) the date he or she becomes Disabled, or (v) the date Company Contributions are completely discontinued or the Plan is terminated. Notwithstanding anything to the contrary, if a Participant terminates employment with the Affiliated Companies prior to vesting as set forth in this Section 5.2(a), his or her unvested RAC Subaccount, NEC Subaccount or CPSC Subaccount and earnings thereon shall be immediately forfeited upon such termination. For this purpose, years of service shall be calculated in the same manner as for purposes of determining vesting under the NGSP (including the treatment of a break in service).

(b) A Participant whose original date of hire with the Affiliated Companies is after April 30, 2012 shall become fully vested in his or her Company matching contributions under Sections 3.2(b)(1) and (4) and earnings thereon upon the earliest of the following dates, provided he or she is an Employee at such time: (i) the date he or she completes three years of service, (ii) the date of his or her 65th birthday, (iii) the date of his or her death, or (iv) the date he or she becomes Disabled, or (v) the date Company Contributions are completely discontinued or the Plan is terminated. Notwithstanding anything to the contrary, if a Participant terminates employment with the Affiliated Companies prior to vesting as set for in this Section 5.2(b), his or her unvested Company matching contributions under Sections 3.2(b)(1) and (4) and earnings thereon shall be immediately forfeited upon such termination. For this purpose, years of service shall be calculated in the same manner as for purposes of determining vesting in Retirement Account Contributions under the NGSP (including the treatment of a break in service).

(c) Forfeitures on account of a lost payee. See Section 6.6.

(d) Forfeitures under an escheat law.

(e) Recapture of amounts improperly credited to a Participant's Account or improperly paid to or with respect to a Participant.

(f) Expenses charged to a Participant's Account.

(g) Investment losses.

ARTICLE VI
DISTRIBUTIONS

6.1 Distribution Rules for Non-RAC, Non-NEC and Non-CPSC Amounts

The rules in this Section 6.1 apply to distribution of a Participant's Account other than the RAC Subaccount, the NEC Subaccount and the CPSC Subaccount.

Notwithstanding the foregoing, Appendix B governs the distribution of amounts that were earned and vested (within the meaning of Code section 409A and regulations thereunder) under the Plan prior to 2005 (and earnings thereon) and are exempt from the requirements of Code section 409A. Thus, this Section 6.1 does not apply to these pre-2005 deferrals, but does apply to all other amounts deferred under the Plan.

(a) Separate Distribution Election. A Participant must make a separate distribution election for each year's contributions. A Participant generally makes a distribution election at the same time the Participant makes the deferral election, i.e., during the Open Enrollment Period (or, with respect to a deferral election by an Eligible New Hire pursuant to Section 3.1(a)(2), on the first day of his or her employment).

(b) Distribution Upon Separation. A Participant may elect on a deferral form to have the vested portion of his Account related to amounts deferred under the deferral form and Company contributions for the same year (and earnings thereon) distributed in a lump sum or in quarterly or annual installments over a period of 1 to 15 years. Lump sum payments under the Plan will be made in the month following the Participant's Separation from Service. Installment payments shall commence in the March, June, September or December next following the month of Separation from Service. If a Participant does not make a distribution election and his vested Account balance (including amounts subject to Appendix B) exceeds $50,000 and the Participant is age 55 or older at the time the Participant Separates from Service, the Participant will receive quarterly installments over a 10-year period. Otherwise, a Participant not making an election will receive a lump sum payment. Notwithstanding the foregoing, if the Participant's vested Account balance (including amounts subject to Appendix B) is $50,000 or less or the Participant is under age 55 at the time the Participant Separates from Service, the vested Account balance shall be distributed in a lump sum payment in the month following the Participant's Separation from Service.

Notwithstanding the timing rules in the foregoing paragraph, distributions may not be made to a Key Employee upon a Separation from Service before the date which is six months after the date of the Key Employee's Separation from Service (or, if earlier, the date of death of the Key Employee). All payments to be made upon the Separation from Service shall be delayed six months in accordance with Treas. Reg. section 1.409A-3(i)(2)(ii).

At the discretion of the Administrative Committee, a distribution may commence earlier or later than the date specified above, provided that the timing of any such commencement complies with Treas. Reg. section 1.409A-3(d) or any successor thereto.

(c) Changes in Form of Distribution. A Participant may make up to two subsequent elections to change the form of a distribution for any year's deferrals and Company contributions. Such an election, however, shall be effective only if the following conditions are satisfied:

(1) The election may not take effect until at least twelve (12) months after the date on which the election is made; and

(2) The distribution will be made exactly five (5) years from the date the distribution would have otherwise been made.

6.2 Distribution Rules for RAC Subaccount, NEC Subaccount and CPSC Subaccount

The full vested balance in a RAC Subaccount, a NEC Subaccount and a CPSC Subaccount shall be distributed in a lump sum upon a RAC Participant's, NEC Participant's or CPSC Participant's (as applicable) Separation from Service. Notwithstanding the foregoing, distribution will not be made to a Key Employee upon a Separation from Service until the date which is six months after the date of the Key Employee's Separation from Service (or, if earlier, the date of death of the Key Employee).

At the discretion of the Administrative Committee, a distribution may commence earlier or later than the date specified above, provided that the timing of any such commencement complies with Treas. Reg. section 1.409A-3(d) or any successor thereto.

6.3 Effect of Taxation

If a Participant's benefits under the Plan are includible in income pursuant to Code section 409A, the Company shall have the discretion to accelerate the distribution of all or a portion of such includible benefits to the Participant, provided that the Participant shall not be given a direct or indirect election as to whether such discretion is exercised.

6.4 Permitted Delays

Notwithstanding the foregoing, any payment to a Participant under the Plan shall be delayed upon the Committee's reasonable anticipation of one or more of the following events:

(a) The Company's deduction with respect to such payment would be eliminated by application of Code section 162(m); or

(b) The making of the payment would violate Federal securities laws or other applicable law;

(c) provided, that any payment delayed pursuant to this Section 6.4 shall be paid in accordance with Code section 409A.

6.5 Payments Not Received At Death

In the event of the death of a Participant before receiving a payment, payment will be made to his or her estate if death occurs on or after the date of a check that has been issued by the Plan. Otherwise, payment of the amount will be made to the Participant's Beneficiary.

6.6 Inability to Locate Participant

In the event that the Administrative Committee is unable to locate a Participant or Beneficiary within two years following the required payment date, the amount allocated to the Participant's Account shall be forfeited. If, after such forfeiture and prior to termination of the Plan, the Participant or Beneficiary later claims such benefit, such benefit shall be reinstated without interest or earnings for the forfeiture period.

6.7 Committee Rules

All distributions are subject to the rules and procedures of the Administrative Committee. The Administrative Committee may also require the use of particular forms. The Administrative Committee may change its rules, procedures and forms from time to time and without prior notice to Participants.

ARTICLE VII
ADMINISTRATION

7.1 Committees

(a) Effective April 27, 2006, the Administrative Committee shall be comprised of the individuals (in their corporate capacity) who are members of the Administrative Committee for Northrop Grumman Deferred Compensation Plan. If no such Administrative Committee exists, the members of the Administrative Committee for the Plan shall be individuals holding the following positions within the Company (as such titles may be modified from time to time), or their successors in office: the Corporate Vice President and Chief Human Resources and Administration Officer; the Corporate Vice President, Controller and Chief Accounting Officer; the Vice President, Taxation; the Vice President, Compensation, Benefits and HRIS; and the Corporate Director, Benefits Administration and Services. A member of the Administrative Committee may resign by delivering a written notice of resignation to the Corporate Vice President and Chief Human Resources and Administration Officer.

(b) Prior to April 27, 2006, the Administrative Committee shall be comprised of the individuals appointed by the Compensation Committee of the Board (the "Compensation Committee").

(c) An Investment Committee (referred to together with the Administrative Committee as, the "Committees"), comprised of one or more persons, shall be appointed by and serve at the pleasure of the Board (or its delegate). The number of members comprising the Investment Committee shall be determined by the Board, which may from time to time vary the number of members. A member of the Investment Committee may resign by delivering a written notice of resignation to the Board. The Board may remove any member by delivering a certified copy of its resolution of removal to such member. Vacancies in the membership of the Investment Committee shall be filled promptly by the Board.

7.2 Committee Action

Each Committee shall act at meetings by affirmative vote of a majority of the members of that Committee. Any determination of action of a Committee may be made or taken by a majority of a quorum present at any meeting thereof, or without a meeting, by resolution or written memorandum signed by a majority of the members of the Committee then in office. A member of a Committee shall not vote or act upon any matter which relates solely to himself or herself as a Participant. The Chairman or any other member or members of each Committee designated by the Chairman may execute any certificate or other written direction on behalf of the Committee of which he or she is a member.

The Compensation Committee shall appoint a Chairman from among the members of the Administrative Committee and a Secretary who may or may not be a member of the Administrative Committee. The Administrative Committee shall conduct its business according to the provisions of this Article and the rules contained in the current edition of Robert's Rules of Order or such other rules of order the Administrative Committee may deem appropriate. The Administrative Committee shall hold meetings from time to time in any convenient location.

7.3 Powers and Duties of the Administrative Committee

The Administrative Committee shall enforce the Plan in accordance with its terms, shall be charged with the general administration of the Plan, and shall have all powers necessary to accomplish its purposes, including, but not by way of limitation, the following:

(a) To construe and interpret the terms and provisions of this Plan and make all factual determinations;

(b) To compute and certify to the amount and kind of benefits payable to Participants and their Beneficiaries;

(c) To maintain all records that may be necessary for the administration of the Plan;

(d) To provide for the disclosure of all information and the filing or provision of all reports and statements to Participants, Beneficiaries or governmental agencies as shall be required by law;

(e) To make and publish such rules for the regulation of the Plan and procedures for the administration of the Plan as are not inconsistent with the terms hereof;

(f) To appoint a Plan administrator or any other agent, and to delegate to them such powers and duties in connection with the administration of the Plan as the Administrative Committee may from time to time prescribe (including the power to subdelegate);

(g) To exercise powers granted the Administrative Committee under other Sections of the Plan; and

(h) To take all actions necessary for the administration of the Plan, including determining whether to hold or discontinue insurance policies purchased in connection with the Plan.

7.4 Powers and Duties of the Investment Committee

The Investment Committee shall have all powers necessary to accomplish its purposes, including, but not by way of limitation, the following:

(a) To select types of investment and the actual investments against which earnings and losses will be measured;

(b) To oversee any rabbi trust; and

(c) To appoint agents, and to delegate to them such powers and duties in connection with its duties as the Investment Committee may from time to time prescribe (including the power to subdelegate).

7.5 Construction and Interpretation

The Administrative Committee shall have full discretion to construe and interpret the terms and provisions of this Plan, to make factual determinations and to remedy possible inconsistencies and omissions. The Administrative Committee's interpretations, constructions and remedies shall be final and binding on all parties, including but not limited to the Affiliated Companies and any Participant or Beneficiary. The Administrative Committee shall administer such terms and provisions in a uniform and nondiscriminatory manner and in full accordance with any and all laws applicable to the Plan.

7.6 Information

To enable the Committees to perform their functions, the Affiliated Companies adopting the Plan shall supply full and timely information to the Committees on all matters relating to the compensation of all Participants, their death or other events that cause termination of their participation in this Plan, and such other pertinent facts as the Committees may require.

7.7 Committee Compensation, Expenses and Indemnity

(a) The members of the Committees shall serve without compensation for their services hereunder.

(b) The Committees are authorized to employ such accounting, consultants or legal counsel as they may deem advisable to assist in the performance of their duties hereunder.

(c) To the extent permitted by ERISA and applicable state law, the Company shall indemnify and hold harmless the Committees and each member thereof, the Board and any delegate of the Committees who is an employee of the Affiliated Companies against any and all expenses, liabilities and claims, including legal fees to defend against such liabilities and claims arising out of their discharge in good faith of responsibilities under or incident to the Plan, other than expenses and liabilities arising out of willful misconduct. This indemnity shall not preclude such further indemnities as may be available under insurance purchased by the Company or provided by the Company under any bylaw, agreement or otherwise, as such indemnities are permitted under ERISA and state law.

7.8 Disputes

The Company's standardized "Northrop Grumman Nonqualified Retirement Plans Claims and Appeals Procedures" shall apply in handling claims and appeals under this Plan.

ARTICLE VIII
MISCELLANEOUS

8.1 Unsecured General Creditor

Participants and their Beneficiaries, heirs, successors, and assigns shall have no legal or equitable rights, claims, or interest in any specific property or assets of the Affiliated Companies. No assets of the Affiliated Companies shall be held in any way as collateral security for the fulfilling of the obligations of the Affiliated Companies under this Plan. Any and all of the Affiliated Companies' assets shall be, and remain, the general unpledged, unrestricted assets of the Affiliated Companies. The obligation under the Plan of the Affiliated Companies adopting the Plan shall be merely that of an unfunded and unsecured promise of those Affiliated Companies to pay money in the future, and the rights of the Participants and Beneficiaries shall be no greater than those of unsecured general creditors. It is the intention of the Affiliated Companies that this Plan be unfunded for purposes of the Code and for purposes of Title I of ERISA.

8.2 Restriction Against Assignment

(a) The Company shall pay all amounts payable hereunder only to the person or persons designated by the Plan and not to any other person or corporation. No part of a Participant's Accounts shall be liable for the debts, contracts, or engagements of any Participant, his or her Beneficiary, or successors in interest, nor shall a Participant's Accounts be subject to execution by levy, attachment, or garnishment or by any other legal or equitable proceeding, nor shall any such person have any right to alienate, anticipate, sell, transfer, commute, pledge, encumber, or assign any benefits or payments hereunder in any manner whatsoever. If any Participant, Beneficiary or successor in interest is adjudicated bankrupt or purports to anticipate, alienate, sell, transfer, commute, assign, pledge, encumber or charge any distribution or payment from the Plan, voluntarily or involuntarily, the Administrative Committee, in its discretion, may cancel such distribution or payment (or any part thereof) to or for the benefit of such Participant, Beneficiary or successor in interest in such manner as the Administrative Committee shall direct.

(b) The actions considered exceptions to the vesting rule under Section 5.2 will not be treated as violations of this Section.

(c) Notwithstanding the foregoing, all or a portion of a Participant's vested Account balance may be paid to another person as specified in a domestic relations order that the Administrative Committee determines is qualified (a "Qualified Domestic Relations Order"). For this purpose, a Qualified Domestic Relations Order means a judgment, decree, or order (including the approval of a settlement agreement) which is:

(1) issued pursuant to a State's domestic relations law;

(2) relates to the provision of child support, alimony payments or marital property rights to a spouse, former spouse, child or other dependent of the Participant;

(3) creates or recognizes the right of a spouse, former spouse, child or other dependent of the Participant to receive all or a portion of the Participant's benefits under the Plan; and

(4) meets such other requirements established by the Administrative Committee.

The Administrative Committee shall determine whether any document received by it is a Qualified Domestic Relations Order. In making this determination, the Administrative Committee may consider the rules applicable to "domestic relations orders" under Code section 414(p) and ERISA section 206(d), and such other rules and procedures as it deems relevant.

8.3 Restriction Against Double Payment

If a court orders an assignment of benefits despite Section 8.2, the affected Participant's benefits will be reduced accordingly. The Administrative Committee may use any reasonable actuarial assumptions to accomplish the offset under this Section.

8.4 Withholding

There shall be deducted from each payment made under the Plan or any other compensation payable to the Participant (or Beneficiary) all taxes, which are required to be withheld by the Affiliated Companies in respect to such payment or this Plan. The Affiliated Companies shall have the right to reduce any payment (or compensation) by the amount of cash sufficient to provide the amount of said taxes.

8.5 Amendment, Modification, Suspension or Termination

The Company may, in its sole discretion, terminate, suspend or amend this Plan at any time or from time to time, in whole or in part for any reason. Notwithstanding the foregoing, no amendment or termination of the Plan shall reduce the amount of a Participant's Account balance as of the date of such amendment or termination. Upon termination of the Plan, distribution of balances in Accounts shall be made to Participants and Beneficiaries in the manner and at the time described in Article VI, unless the Company determines in its sole discretion that all such amounts shall be distributed upon termination in accordance with the requirements under Code section 409A.

Notwithstanding the foregoing, no amendment of the Plan shall apply to amounts that were earned and vested (within the meaning of Code section 409A and regulations thereunder) under the Plan prior to 2005, unless the amendment specifically provides that it applies to such amounts. The purpose of this restriction is to prevent a Plan amendment from resulting in an inadvertent "material modification" to amounts that are "grandfathered" and exempt from the requirements of Code section 409A.

8.6 Governing Law

To the extent not preempted by ERISA, this Plan shall be construed, governed and administered in accordance with the laws of Delaware.

8.7 Receipt and Release

Any payment to a payee in accordance with the provisions of the Plan shall, to the extent thereof, be in full satisfaction of all claims against the Plan, the Committees and the Affiliated Companies. The Administrative Committee may require such payee, as a condition precedent to such payment, to execute a receipt and release to such effect.

8.8 Payments on Behalf of Persons Under Incapacity

In the event that any amount becomes payable under the Plan to a person who, in the sole judgment of the Administrative Committee, is considered by reason of physical or mental condition to be unable to give a valid receipt therefore, the Administrative Committee may direct that such payment be made to any person found by the Committee, in its sole judgment, to have assumed the care of such person. Any payment made pursuant to such determination shall constitute a full release and discharge of the Administrative Committee and the Company.

8.9 Limitation of Rights and Employment Relationship

Neither the establishment of the Plan, any trust nor any modification thereof, nor the creating of any fund or account, nor the payment of any benefits shall be construed as giving to any Participant, or Beneficiary or other person any legal or equitable right against the Affiliated Companies or any trustee except as provided in the Plan and any trust agreement; and in no event shall the terms of employment of any Employee or Participant be modified or in any way be affected by the provisions of the Plan and any trust agreement.

8.10 Headings

Headings and subheadings in this Plan are inserted for convenience of reference only and are not to be considered in the construction of the provisions hereof.

8.11 Liabilities Transferred to HII

Northrop Grumman Corporation distributed its interest in Huntington Ingalls Industries, Inc. ("HII") to its shareholders on March 31, 2011 (the "HII Distribution Date"). Pursuant to an agreement between Northrop Grumman Corporation and HII, on the HII Distribution Date certain employees and former employees of HII ceased to participate in the Plan and the liabilities for these participants' benefits under the Plan were transferred to HII. On and after the HII Distribution Date, the Company and the Plan, and any successors thereto, shall have no further obligation or liability to any such participant with respect to any benefit, amount, or right due under the Plan.

* * *   *

IN WITNESS WHEREOF, this Amendment and Restatement is hereby executed by a duly authorized officer on this 20th day of June, 2023.

NORTHROP GRUMMAN CORPORATION

By: **/s/ Ann Addison**
Ann Addison
Corporate Vice President and
Chief Human Resources Officer

APPENDIX A – 2005 TRANSITION RELIEF

The following provisions apply only during 2005, pursuant to transition relief granted in IRS Notice 2005-1:

A.1 Cash-Out

Participants Separating from Service during 2005 for any reason before age 55 will receive an immediate lump sum distribution of their Account balances. Other Participants Separating from Service in 2005 will receive payments in accordance with their prior elections.

A.2 Elections

During the Plan's open enrollment period in June 2005 Participants may fully or partially cancel 2005 deferral elections and receive in 2005 a refund of amounts previously deferred in 2005.

In addition, individuals working in Company facilities impacted by Hurricane Katrina may stop or reduce 2005 elective contributions to the Plan at any time during 2005. All payments under this Section A.2 will be made before the end of calendar year 2005.

A.3 Key Employees

Key Employees Separating from Service on or after July 1, 2005, with distributions subject to Code section 409A and scheduled for payment in 2006 within six months of Separation from Service, may choose I or II below, subject to III:

I. Delay the distributions described above for six months from the date of Separation from Service. The delayed payments will be paid as a single sum with interest at the end of the six-month period, with the remaining payments resuming as scheduled.

II. Accelerate the distributions described above into a payment in 2005 without interest adjustments.

III. Key Employees must elect I or II during 2005.

APPENDIX B – DISTRIBUTION RULES FOR PRE-2005 AMOUNTS

Distribution of amounts earned and vested (within the meaning of Code section 409A and regulations thereunder) under the Plan or a Merged Plan prior to 2005 (and earnings thereon) are exempt from the requirements of Code section 409A and shall be made in accordance with the Plan or the applicable Merged Plan terms as in effect on December 31, 2004 and as summarized in the following provisions, except as otherwise provided in Appendix C.

B.1 Distribution of Contributions

(a) Distributions Upon Early Termination.

(1) Voluntary Termination. If a Participant voluntarily terminates employment with the Affiliated Companies before age 55 or Disability, distribution of his or her Account will be made in a lump sum on the Participant's Payment Date.

(2) Involuntary Termination. If a Participant involuntarily terminates employment with the Affiliated Companies before age 55, distribution of his or her Account will generally be made in quarterly or annual installments over a fixed number of whole years not to exceed 15 years, commencing on the Participant's Payment Date, in accordance with the Participant's original election on his or her deferral election form. Payment will be made in a lump sum if the Participant had originally elected a lump sum, if the Account balance is $50,000 or less, or if the Administrative Committee so specifies.

(b) Distribution After Retirement, Disability or Death. In the case of a Participant who separates from service with the Affiliated Companies on account of Retirement, Disability or death and has an Account balance of more than $50,000, the Account shall be paid to the Participant (and after his or her death to his or her Beneficiary) in substantially equal quarterly installments over 10 years commencing on the Participant's Payment Date unless an optional form of benefit has been specified pursuant to Section B.1(b)(1).

(1) An optional form of benefit may be elected by the Participant, on the form provided by Administrative Committee, during his or her initial election period from among those listed below:

(i) A lump sum distribution on the Participant's Payment Date.

(ii) Quarterly installments over a period of at least 1 and no more than 15 years beginning on the Participant's Payment Date.

(iii) Annual installments over a period of at least 2 and no more than 15 years beginning on the Participant's Payment Date.

(2) A Participant from time to time may modify the form of benefit that he or she has previously elected. Upon his or her separation from service, the most recently elected form of distribution submitted at least 12 months prior to separation will govern. If no such election exists, distributions will be paid under the 10-year installment method.

(3) In the case of a Participant who terminates employment with the Affiliated Companies on account of Retirement, Disability or death with an Account balance of $50,000 or less, the Account shall be paid to the Participant in a lump sum distribution on the Participant's Payment Date.

(4) In general, upon the Participant's death, payment of any remaining Account balance will be made to the Beneficiary in a lump sum on the Payment Date. But the Beneficiary will receive any remaining installments (starting on the Payment Date) if the Participant was receiving installments, or if the Participant died on or after age 55 with an Account balance over $50,000 and with an effective installment payout election in place. In such cases, the Beneficiary may still elect a lump sum payment of the remaining Account balance, but only with the Administrative Committee's consent.

(5) In the event that this Plan is terminated, the amounts allocated to a Participant's Account shall be distributed to the Participant or, in the event of his or her death, to his or her Beneficiary in a lump sum.

APPENDIX C – MERGED PLANS

C.1 Plan Mergers

(a) Merged Plans. As of their respective effective dates, the plans listed in (c) (the "Merged Plans") are merged into this Plan. All amounts from those plans that were merged into this Plan are held in their corresponding Accounts.

(b) Accounts. Effective as of the dates below, Accounts are established for individuals who, before the merger, had account balances under the merged plans. These individuals will not accrue benefits under this Plan unless they become Participants by virtue of being hired into a covered position with an Affiliated Company, but they will be considered Participants for purposes of the merged accounts. The balance credited to the Participant's merged plan account will, effective as of the date provided in the table below, be invested in accordance with the terms of this Plan. Except as provided in section C.2 below, amounts merged into this Plan from the merged plans are governed by the terms of this Plan.

(c) Table.

Name of Merged Plans	Merger Effective Dates	Merged Account Names
Northrop Grumman Benefits Equalization Plan	December 10, 2004	NG BEP Account
Northrop Grumman Space & Mission Systems Corp. Deferred Compensation Plan	December 10, 2004	S & MS Deferred Compensation Account
BDM International, Inc. 1997 Executive Deferred Compensation Plan ("BDM Plan")	April 29, 2005	BDM Account
PRC Inc. Executive Deferred Compensation Plan ("PRC Plan")	November 9, 2012	PRC EDCP Account (or Sub-Account, as applicable)

C.2 Merged Plans – General Rule

(a) NG BEP Account and S & MS Deferred Compensation Account. Distributions from Participants' NG BEP and S & MS Deferred Compensation Accounts are made under the provisions of Appendix B, except as provided in this Section.

(1) Amounts in the Participant's NG BEP Account and the S & MS Deferred Compensation Account shall be paid out in accordance with elections made under the Merged Plans.

(2) The Participant's "Payment Date" for amounts in the NG BEP Account and the S & MS Deferred Compensation Account shall be deemed to be the end of January following the Participant's termination of employment.

(3) The reference to $50,000 in the provisions of Appendix B shall be deemed to be $5,000 with respect to amounts in the NG BEP Account and the S & MS Deferred Compensation Account.

(4) The Administrative Committee shall assume the rights and responsibilities of the Directors/Committee with respect to determining whether a Participant's NG BEP Account may be paid out in a form other than the automatic form of payment.

(5) The Administrative Committee shall assume the rights and responsibilities of the Committee or Special Committee with respect to determining whether a Participant's S & MS Deferred Compensation Account may be paid out in a form other than the automatic form of payment.

(6) For purposes of determining the time of payment of a Participant's NG BEP Account, a Participant's employment will not be deemed to have terminated following the Participant's layoff until the earlier of the end of the twelve-month period following layoff (without a return to employment with the Affiliated Companies) or the date on which the Participant retires under any pension plan maintained by the Affiliated Companies.

(7) A Participant's S & MS Deferred Compensation Account shall be paid to the Participant no later than the January 5 next preceding the Participant's 80th birthday.

(8) In no event will payments of amounts in the Participant's NG BEP Account and the S & MS Deferred Compensation Account be accelerated or deferred beyond the payment schedule provided under the Merged Plans. However, any election to change the time or form of payment for such an amount may be made based on the terms of the relevant Merged Plan as in effect on October 3, 2004.

(b) <u>BDM Account</u>. Distributions of a Participant's vested BDM Account balance shall be made in accordance with this Section C.2(b), and Article VI shall not apply to such distributions. A Participant shall be vested in his BDM Account balance in accordance with the vesting provisions of the BDM Plan.

(1) <u>Timing of Payment</u>: A Participant's vested BDM Account balance shall be distributed in accordance with elections made under the BDM Plan. For those Participants who have not commenced distributions as of April 29, 2005, payments from the BDM Account will commence at the time designated on his or her BDM enrollment and election form, unless extended prior to such date. However, if such a Participant did not elect a fixed date (or elect the earlier of a fixed date or termination of employment), his or her vested BDM Account balance will be paid as soon as administratively practicable following termination of employment in the form designated under Section C.2(b)(2) below.

(2) <u>Form of Payment</u>: A Participant's vested BDM Account balance shall be paid in cash. The vested BDM Account balance will be paid in (i) a lump sum, (ii) five (5) or ten (10) substantially equal annual installments (adjusted for gains and losses), or (iii) a combination thereof, as selected by the Participant (or Beneficiary) prior to the date on which amounts are first payable to the Participant (or Beneficiary) under Section C.2(b)(1) above. If the Participant fails to designate properly the manner of payment, such payment will be made in a lump sum.

(3) <u>Death Benefits</u>: If a Participant dies before commencement of payment of his BDM Account balance, the entire Account balance will be paid at the times provided in Section C.2(b)(2) above to his or her Beneficiary. If a Participant dies after commencement but before he or she has received all payments from his vested BDM Account balance, the remaining installments shall be paid annually to the Beneficiary. For purposes of this Section C.2(b), a Participant's Beneficiary, unless subsequently changed, will be the designated beneficiary(ies) under the BDM Plan or if none, the Participant's spouse, if then living, but otherwise the Participant's then living descendants, if any, per stirpes, but, if none, the Participant's estate.

(4) <u>Lost Participant</u>: In the event that the Administrative Committee is unable to locate a Participant or Beneficiary within three years following the payment date under Section C.2(b)(1) above, the amount allocated to the Participant's BDM Account shall be forfeited. If, after such forfeiture and prior to termination of the Plan, the Participant or Beneficiary later claims such benefit, such benefit shall be reinstated without interest or earnings for the forfeiture period. In lieu of such a forfeiture, the Administrative Committee has the discretion to direct distribution of the vested BDM Account balance to any one or more or all of the Participant's next of kin, and in the proportions as the Administrative Committee determines.

(5) <u>Committee Rules</u>: All distributions are subject to the rules and procedures of the Administrative Committee. The Administrative Committee may also require the use of particular forms. The

Administrative Committee may change its rules, procedures and forms from time to time and without prior notice to Participants.

(6) Payment Schedule: In no event will payments of amounts in the Participant's BDM Account be accelerated or deferred beyond the payment schedule provided under the BDM Plan.

(7) Application to Trustee: BDM International, Inc. set aside amounts in a grantor trust to assist it in meeting its obligations under the BDM Plan. Notwithstanding Section C.2(b)(5) above and the claims procedures provided in Section 7.8, a Participant may make application for payment of benefits under this Section C.2(b) directly to the trustee of such trust.

(c) PRC EDCP Account. Notwithstanding anything to the contrary, the following provisions in this Section C.2(c) summarize the distribution rules in effect under the PRC Plan with respect to the PRC EDCP Account balances, and those PRC Plan distribution terms shall continue to govern the distributions of the PRC EDCP Account balances. Article VI and Appendix B shall not apply to the PRC EDCP Account balances. Nothing in this Section C.2(c) shall change or alter the distribution terms of the PRC Plan in effect as of any date. All capitalized terms in this Section C.2(c) not otherwise defined in the Plan shall be defined in accordance with the terms of the PRC Plan as in effect immediately prior to the PRC Plan's merger with the Plan on November 9, 2012.

(1) Vesting. All Participants are vested in their PRC EDCP Account balances in accordance with the vesting provisions of the PRC Plan.

(2) Fixed Payment Dates; Termination of Employment. A Participant's vested PRC EDCP Account balance shall be distributed in accordance with his elections made under the PRC Plan. However, if such a Participant did not elect a fixed date or termination of employment with all Employers (or elect the earlier of a fixed date or termination of employment) for any particular portion of his or her vested PRC EDCP Account, such portion of his or her PRC EDCP Account balance will be valued and payable at or commence at such Participant's termination of employment according to the provisions of Sections C.2(c)(4) and (5).

(3) Hardship Distributions. In the event of financial hardship of the Participant, as hereinafter defined, the Participant may apply to the Administrative Committee for the distribution of all or any part or his or her vested PRC EDCP Account. The Administrative Committee shall consider the circumstances of each such case, and the best interests of the Participant and his or her family, and shall have the right, in its sole and absolute discretion, if applicable, to allow such distribution, or, if applicable, to direct a distribution of part of the amount requested, or to refuse to allow any distribution. Upon a finding of financial hardship, the Administrative Committee shall make or cause the appropriate distribution to be made to the Participant from amounts held by the Company or the Trustee in respect of the Participant's vested PRC EDCP Account. In no event shall the aggregate amount of the distribution exceed either the full value of the Participant's vested PRC EDCP Account or the amount determined by the Administrative Committee, in its sole and absolute discretion, to be necessary to alleviate the Participant's financial hardship (which financial hardship may be considered to include any taxes due because of the distribution occurring because of this Section), and which is not reasonably available from other resources of the Participant. For purposes of this Section, the value of the Participant's vested PRC EDCP Account shall be determined as of the date of the distribution. "Financial hardship" means (i) a severe financial hardship to the Participant resulting from a sudden and unexpected illness or accident of the Participant or of a dependent (as defined in Code section 152(a)) of the Participant, (ii) loss of the Participant's property due to casualty, or (iii) other similar extraordinary and unforeseeable circumstances arising as a result of events beyond the control of the Participant, each as determined to exist by the Administrative Committee. A distribution may be made under this Section only with the consent of the Administrative Committee.

(4) Amount and Time of Payment. Subject to Section C.2(c)(3), a Participant (or his or her Beneficiary) shall become entitled to receive a vested PRC EDCP Sub-Account balance commencing on the Payment Date for such sub-account. For this purpose, the "Payment Date" will be the relevant date or event triggering payment as provided under Section C.2(c)(2). Notwithstanding the foregoing, a Participant may elect to postpone a Payment Date to a later date, provided the election is made at least 12 months prior to the scheduled Payment Date. For example, a Participant could elect (i) to postpone a fixed payment date to a later fixed payment date, or (ii) elect to postpone the payment date for an amount payable upon termination of employment to a date that necessarily occurs after termination of employment (e.g., two years after termination of employment). There is no limit on the number of such elections a Participant may make. Any payment due hereunder from the Trust which is not paid by the Trust for any reason will be paid by the Employer from its general assets.

(5) Method of Payment.

(i) Form of Payment. Unless otherwise elected by the Participant and permitted by the Trustee in its sole and absolute discretion, a Participant's vested PRC EDCP Account balance shall be paid in cash. In the case of distributions to a Participant or his or her Beneficiary by virtue of an entitlement pursuant to Section C.2(c)(2), an aggregate amount equal to the Participant's vested PRC EDCP Sub-Account will be paid by the Trust or the Employer, as provided by Section C.2(c)(4), in a lump sum or in five (5) or ten (10) substantially equal annual installments (adjusted for gains and losses, and reduced by any required withholding or other deductions from such payments), as selected by the Participant on his or her Participant Enrollment and Election Form for such sub-account. If the Participant fails to designate properly the manner of payment, such payment will be made in a lump sum.

If a Participant receiving installment distributions pursuant to Section C.2(c)(7) is re-employed by the Employer, the remaining distributions due to the Participant shall be suspended until such time as the Participant (or his or her Beneficiary) once again becomes eligible for benefit payments, at which time such distribution shall commence, subject to the limitations and conditions contained in the PRC Plan.

(ii) Subsequent Deferral Elections. Such form of payment may be changed by the Participant provided (A) the election is made at least 12 months prior to the payment date for the PRC EDCP Sub-Account provided under Section C.2(c)(4) and (B) the form of payment is not accelerated (i.e., an election of installments may not be changed to a lump sum and an election of 10 annual installments may not be changed to 5 annual installments). There is no limit on the number of such elections a Participant may make.

(6) Death Benefits. If a Participant dies before terminating his or her employment with the Employer and before the commencement of payments to the Participant hereunder, the entire value of the Participant's PRC EDCP Account (which may include credits for insurance contract death benefits deemed to be received by the PRC EDCP Account) shall be paid, as provided in Section C.2(c)(5), to the Beneficiary designated under the Plan, unless the Employer elects a more rapid form or schedule of distribution.

Upon the death of a Participant after payments hereunder have begun but before he or she has received all payments to which he or she is entitled under the Plan, the remaining benefit payments shall be paid to the Beneficiary designated under the Plan, in the manner in which such benefits were payable to the Participant, unless the Employer elects a more rapid form or schedule of distribution.

(7) Application to Trustee. Notwithstanding Section 6.7 above and the claims procedures provided in Section 7.8, on the date or dates on which a Participant or Beneficiary is entitled to payment under Section C.2(c)(2), the Participant or Beneficiary need not make application for payment to the Administrative Committee, but instead may make application for payment directly to the Trustee who shall, subject to any restrictions or limitations contained in the Trust, pay the Participant or Beneficiary the appropriate amount directly from the Trust without the consent of PRC or the Employer. The Trustee shall report the amount of each such payment, and any withholding thereon, to the Company.

APPENDIX D – COMMITTEES AND APPOINTMENTS

Notwithstanding anything to the contrary in this Plan, effective October 25, 2011, the Chief Executive Officer of Northrop Grumman Corporation shall appoint, and shall have the power to remove, the members of (1) an Administrative Committee that shall have responsibility for administering the Plan (including as such responsibilities are described in Article VII of the Plan) and (2) an Investment Committee that shall have responsibility for overseeing any rabbi trusts or other informal funding for the Plan.

APPENDIX E – Eligible OADCP Participants

E.1 The following words and phrases used in this Appendix E, with the first letter capitalized, shall have the meanings specified below:

(a) "Eligible OADCP Participant" means an employee of NGIS who is employed as of December 31, 2018 and has elected to defer Performance Cash under the OADCP that otherwise would be payable in 2019.

(b) "OADCP" means the Northrop Grumman Innovation Systems Nonqualified Deferred Compensation Plan (formerly the Orbital ATK, Inc. Nonqualified Deferred Compensation Plan).

(c) "Performance Cash" shall have the meaning assigned to such term under the OADCP.

E.2 Notwithstanding anything to the contrary in this Plan, effective June 29, 2018 an Eligible OADCP Participant shall become a Participant in the Plan.

E.3 An Eligible OADCP Participant shall receive:

(a) A Company Contribution equal to the matching contribution rate for which the Eligible OADCP Participant is eligible under the NGSP for 2019 multiplied by the amount of Performance Cash deferred by the Eligible OADCP Participant under the OADCP for Performance Cash otherwise payable in 2019; and

(b) A Company Contribution equal to the nonelective company contribution amount that the Eligible OADCP Participant would have received under the NGSP had the Performance Cash otherwise payable in 2019 not been deferred under the OADCP.

E.4 An Eligible OADCP Participant shall be vested in his or her Company Contributions under Section E.3 pursuant to the rules set forth in Section 5.2(b) of the Plan.

EXHIBIT 15

LETTER FROM INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

July 26, 2023

The Board of Directors and Shareholders of Northrop Grumman Corporation

Northrop Grumman Corporation
2980 Fairview Park Drive
Falls Church, Virginia 22042

We are aware that our report dated July 26, 2023, on our review of the interim financial information of Northrop Grumman Corporation and subsidiaries appearing in this Quarterly Report on Form 10-Q for the quarter ended June 30, 2023, is incorporated by reference in Registration Statement Nos. 033-59815, 033-59853, 333-67266, 333-100179, 333-107734, 333-121104, 333-125120, 333-127317, and 333-175798 on Form S-8, 333-270497 on Form S-3, and 333-264549 on Form S-4.

/s/ Deloitte & Touche LLP
McLean, Virginia

NORTHROP GRUMMAN CORPORATION

EXHIBIT 31.1

CERTIFICATION PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Kathy J. Warden, certify that:

1. I have reviewed this report on Form 10-Q of Northrop Grumman Corporation (“company”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c) Evaluated the effectiveness of the company’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d) Disclosed in this report any change in the company’s internal control over financial reporting that occurred during the company's most recent fiscal quarter (the company’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the company’s internal control over financial reporting; and
5. The company’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company’s auditors and the audit committee of the company’s board of directors (or persons performing the equivalent functions):
    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company’s ability to record, process, summarize and report financial information; and
    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: July 26, 2023

/s/ Kathy J. Warden

Kathy J. Warden
Chair, Chief Executive Officer and President

NORTHROP GRUMMAN CORPORATION

EXHIBIT 31.2

CERTIFICATION PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, David F. Keffer, certify that:

1. I have reviewed this report on Form 10-Q of Northrop Grumman Corporation (“company”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   c) Evaluated the effectiveness of the company’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   d) Disclosed in this report any change in the company’s internal control over financial reporting that occurred during the company's most recent fiscal quarter (the company’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the company’s internal control over financial reporting; and
5. The company’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company’s auditors and the audit committee of the company’s board of directors (or persons performing the equivalent functions):
   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company’s ability to record, process, summarize and report financial information; and
   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: July 26, 2023

/s/ David F. Keffer

David F. Keffer
Corporate Vice President and Chief Financial Officer

NORTHROP GRUMMAN CORPORATION

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Northrop Grumman Corporation (the “company”) on Form 10-Q for the period ended June 30, 2023, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Kathy J. Warden, Chair, Chief Executive Officer and President of the company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the company.

Date: July 26, 2023

/s/ Kathy J. Warden
Kathy J. Warden
Chair, Chief Executive Officer and President

NORTHROP GRUMMAN CORPORATION

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Northrop Grumman Corporation (the “company”) on Form 10-Q for the period ended June 30, 2023, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, David F. Keffer, Corporate Vice President and Chief Financial Officer of the company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the company.

Date: July 26, 2023

/s/ **David F. Keffer**

David F. Keffer
Corporate Vice President and Chief Financial Officer