

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

<p>1. Name and Address of Reporting Person*</p> <p><u>PUMA MARY G</u></p> <hr/> <p>(Last) (First) (Middle)</p> <p><u>C/O AXCELIS TECHNOLOGIES, INC.</u></p> <p><u>108 CHERRY HILL DRIVE</u></p> <hr/> <p>(Street)</p> <p><u>BEVERLY MA 01915</u></p> <hr/> <p>(City) (State) (Zip)</p>	<p>2. Issuer Name and Ticker or Trading Symbol</p> <p><u>AXCELIS TECHNOLOGIES INC [ACLS]</u></p>	<p>5. Relationship of Reporting Person(s) to Issuer (Check all applicable)</p> <p><input checked="" type="checkbox"/> Director 10% Owner</p> <p><input checked="" type="checkbox"/> Officer (give title below) Other (specify below)</p> <p><u>EXECUTIVE CHAIRPERSON</u></p>
<p>3. Date of Earliest Transaction (Month/Day/Year)</p> <p><u>02/28/2024</u></p>		<p>6. Individual or Joint/Group Filing (Check Applicable Line)</p> <p><input checked="" type="checkbox"/> Form filed by One Reporting Person</p> <p>Form filed by More than One Reporting Person</p>
<p>4. If Amendment, Date of Original Filed (Month/Day/Year)</p>		
<p>Rule 10b5-1(c) Transaction Indication</p> <p><input type="checkbox"/> Check this box to indicate that a transaction was made pursuant to a contract, instruction or written plan that is intended to satisfy the affirmative defense conditions of Rule 10b5-1(c). See Instruction 10.</p>		

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	02/28/2024		F ⁽¹⁾		6,289	D	(2)	256,198 ⁽³⁾	D	
Common Stock	02/28/2024		F ⁽⁴⁾		6,828	D	(2)	249,370 ⁽⁵⁾	D	
Common Stock								5,000	I	Held by Spouse

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)	5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)	6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
						Date Exercisable	Expiration Date					

Explanation of Responses:

- This forfeiture of shares for tax withholding purposes relates to the vesting on February 28, 2024 of the remainder of performance based restricted stock units ("PRSUs") granted to the executive in May 2022. These shares were determined to be earned by the executive pursuant to a resolution of the Axcelis Technologies, Inc. Compensation Committee on February 16, 2023, and half of the earned shares vested on February 28, 2023. As agreed with the executive, the shares issued to the executive on the vesting were reduced by a number of shares having a value equal to the executive's tax withholding obligation with respect to the vested PRSUs.
- These shares were withheld by the Company to cover the tax withholding obligations of the executive on the vesting of PRSUs on February 28, 2024.
- Of the shares held as of February 28, 2024 after the vesting of the 2022 PRSUs and before the vesting of the 2023 PRSUs, 57,447 were issuable on vesting of restricted stock units granted to the reporting person under the 2012 Equity Incentive Plan and are subject to forfeiture.
- This forfeiture of shares for tax withholding purposes relates to the vesting on February 28, 2024 of PRSUs granted to the executive in May 2023. Of the granted units, 135% were determined to be earned by the executive pursuant to a resolution of the Axcelis Technologies, Inc. Compensation Committee on February 8, 2024, and all of the earned shares vested on February 28, 2024. As agreed with the executive, the shares issued to the executive on the vesting were reduced by a number of shares having a value equal to the executive's tax withholding obligation with respect to the vested PRSUs.
- Of the shares held as of February 28, 2024 after the vesting of both the 2022 PRSUs and 2023 PRSUs, 41,223 were issuable on vesting of restricted stock units granted to the reporting person under the 2012 Equity Incentive Plan and are subject to forfeiture.

/s/ Lynnette C. Fallon,
Attorney-in-Fact

02/28/2024

** Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.