Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of
Swarm Technologies, Inc.

File No.: EB-SED-18-00026685
Acct. No.: 201932100015
FRN: 0026233890

ORDER

Adopted: December 14, 2018
Released: December 20, 2018

By the Commission: Chairman Pai and Commissioner O’Rielly issuing separate statements.

1. The Federal Communications Commission (the Commission) has entered into a Consent Decree to resolve its investigation into whether Swarm Technologies, Inc. (Swarm Technologies) engaged in unauthorized deployment and operation of satellites, unauthorized operation of earth ground stations, and other unauthorized operation and testing of radio frequency equipment. One month after the Commission denied Swarm Technologies’ application to deploy and operate four experimental satellites, Swarm Technologies launched and operated the satellites anyway, with no authorization to do so. Swarm Technologies admitted to the unauthorized launch and operation only after the Commission discovered it. During the investigation into Swarm Technologies’ practices, Swarm Technologies also identified several unauthorized weather balloon-to-ground station tests and unauthorized tests of its satellite and ground station equipment.

2. Unauthorized deployment and operation of satellites risks satellite collisions and radio frequency interference, threatening critical commercial and government satellite operations. To settle this matter, Swarm Technologies admits that it engaged in these unlawful acts, will implement a five-year compliance plan, and will pay a $900,000 civil penalty.

3. After reviewing the terms of the Consent Decree and evaluating the facts before us, we find that the public interest would be served by adopting the Consent Decree and terminating the referenced investigation regarding Swarm Technologies’ compliance with the satellite and radio frequency equipment laws, Sections 301 and 302 of the Communications Act of 1934, as amended (Act), and Sections 2.805, 5.53, 25.102, 25.113 of the Commission’s rules.

4. In the absence of material new evidence relating to this matter, we do not set for hearing the question of Swarm Technologies’ basic qualifications to hold or obtain any Commission license or authorization.

5. Accordingly, IT IS ORDERED that, pursuant to Section 4(i) of the Act, the Consent Decree attached to this Order IS ADOPTED and its terms are incorporated by reference.

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3 See 47 CFR § 1.93(b).
6. **IT IS FURTHER ORDERED** that the above-captioned matter **IS TERMINATED**.

7. **IT IS FURTHER ORDERED** that a copy of this Order and Consent Decree shall be sent by first class mail and certified mail, return receipt requested, to Frank Lamancusa, Morgan, Lewis & Bockius LLP, 2020 K Street, NW, Washington, DC 20006-1806, counsel to Swarm Technologies, Inc.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary
CONSENT DEGREE

1. The Federal Communications Commission and Swarm Technologies, Inc., by their authorized representatives, hereby enter into this Consent Decree for the purpose of terminating an investigation by the Commission’s Enforcement Bureau into whether Swarm Technologies, Inc. violated Sections 301 and 302 of the Communications Act of 1934, as amended (Act), and Sections 1.17, 2.805, 5.53, 25.102, and 25.113 of the Commission’s rules related to unauthorized satellite operations.¹

I. DEFINITIONS

2. For the purposes of this Consent Decree, the following definitions shall apply:

(a) “Act” means the Communications Act of 1934, as amended.²

(b) “Adopting Order” means an order of the Commission adopting the terms of this Consent Decree without change, addition, deletion, or modification.

(c) “Bureau” means the Enforcement Bureau of the Federal Communications Commission.

(d) “Commission” and “FCC” mean the Federal Communications Commission and all of its bureaus and offices.

(e) “Communications Laws” means collectively, the Act, the Rules, and the published and promulgated orders and decisions of the Commission to which Swarm Technologies is subject by virtue of its business activities, including but not limited to the Satellite Rules.

(f) “Compliance Plan” means the compliance obligations, program, and procedures described in this Consent Decree at paragraph 14.

(g) “Covered Employees” means all employees and agents of Swarm Technologies who perform, or supervise, oversee, or manage the performance of, duties that relate to Swarm Technologies’ responsibilities under the Communications Laws, including the Satellite Rules.

(h) “Effective Date” means the date by which all of the following have been accomplished: the Bureau and Swarm Technologies have signed the Consent Decree and the Commission has released the Adopting Order adopting this Consent Decree.

(i) “Investigation” means the investigation commenced by the Bureau in EB-SED-18-00026685 regarding whether Swarm Technologies violated the Satellite Rules.


² 47 U.S.C. § 151 et seq.
(j) “Operating Procedures” means the standard internal operating procedures and compliance policies established by Swarm Technologies to implement the Compliance Plan.

(k) “Parties” means Swarm Technologies and the Commission, each of which is a “Party.”

(l) “Rules” means the Commission’s regulations found in Title 47 of the Code of Federal Regulations.

(m) “Satellite Rules” means Sections 301 and 302 of the Act and Sections 2.805, 5.53, 25.102, and 25.113 of the Commission’s rules and other provisions of the Act, the Rules, and Commission orders related to satellite and radio frequency device operations.

(n) “Swarm Technologies” means Swarm Technologies, Inc. and its affiliates, subsidiaries, predecessors-in-interest, and successors-in-interest.

II. BACKGROUND

3. Section 301 of the Act and Section 25.102(a) of the Commission’s rules prohibit the use or operation of any apparatus for the transmission of energy or communications or signals by an earth station except under and in accordance with a Commission granted authorization.3 Similarly, Section 25.113(g) of the Commission’s rules requires a license prior to deployment and operation of a satellite.4 Section 5.53 of the Commission’s rules requires a license prior to operation in the Experimental Radio Service, which service is intended to allow companies to experiment, develop new products, and conduct market trials.5 Section 302 of the Act and Section 2.805 of the Commission’s rules prohibit operating radio frequency devices prior to authorization.6 These important rules prevent interference in satellite operations and allow the Commission to coordinate and evaluate satellite operations.

4. Swarm Technologies is a start-up focused on creating and deploying small two-way communication satellites to enable low-cost, space-based connectivity anywhere in the world, including to facilitate Internet-of-things applications. These small satellites are called SpaceBEEs or BEEs (short for Basic Electronic Elements). On April 26, 2017, Swarm Technologies filed for a license in the Experimental Radio Service under Part 5 of the Commission’s rules to deploy and operate four BEEs and two earth stations (the “first application”). On December 12, 2017, the Commission denied Swarm Technologies’ first application because of concerns about tracking the BEEs.7 On January 8, 2018, Swarm Technologies filed a second application for authorization to launch and operate a different set of satellites that were a more conventional small satellite size (the “second application”). On January 12, 2018, despite being denied a license for the first application, Swarm Technologies launched the four BEEs through an unaffiliated launch company from a launch facility in India. From January 12-21, 2018, the BEE satellites transmitted to and received transmissions from two Georgia-based earth stations. The Commission was unaware of the unauthorized launch of the BEEs and the unauthorized transmissions between the BEEs and the earth stations and on February 5, 2018, the Commission granted Swarm Technologies’ second application.8 On March 5, 2018, the Commission learned of Swarm Technologies’

4 47 CFR § 25.113(g).
5 47 CFR § 5.53.
8 See OET File No. 0026-EX-ST-2018.
unauthorized launch of the BEEs. Two days later, the Commission set aside the grant of the second application and the Bureau began the Investigation.\(^9\)

5. During the Investigation, the Bureau also learned that Swarm Technologies performed unauthorized weather balloon-to-ground station tests, including on cars driving around Palo Alto, California, that exchanged radio signals for as many as 197 minutes on five different days in 2017 without a license. These weather balloon-to-ground station tests were apparently intended to mimic the satellite-to-earth station systems Swarm Technologies planned to deploy later. Additionally, Swarm Technologies admitted that on two occasions it performed unauthorized tests of equipment by directing unlaunched satellites and earth stations located in the same garage to exchange transmissions.

6. Following the start of the Investigation, Swarm Technologies has not engaged in any unauthorized deployment or operation of satellites or other radio frequency devices and has sought the appropriate licenses for future satellite deployment and operation.

7. To settle this matter, the Parties enter into this Consent Decree and agree to the terms and conditions set forth below. As part of these terms and conditions, Swarm agrees to pay a penalty of $900,000 and to implement a long-term compliance plan.

III. TERMS OF AGREEMENT

8. **Adopting Order.** The provisions of this Consent Decree shall be incorporated by the Commission in an Adopting Order.

9. **Jurisdiction.** Swarm Technologies agrees that the Commission has jurisdiction over it and the matters contained in this Consent Decree and has the authority to enter into and adopt this Consent Decree.

10. **Effective Date; Violations.** The Parties agree that this Consent Decree shall become effective on the Effective Date as defined herein. As of the Effective Date, the Parties agree that this Consent Decree shall have the same force and effect as any other order of the Commission.

11. **Termination of Investigation.** In express reliance on the covenants and representations in this Consent Decree and to avoid further expenditure of public resources, the Commission agrees to terminate the Investigation. In consideration for the termination of the Investigation, Swarm Technologies agrees to the terms, conditions, and procedures contained herein. The Commission further agrees that, in the absence of new material evidence, it will not use the facts developed in the Investigation through the Effective Date, or the existence of this Consent Decree, to institute, on its own motion, any new proceeding, formal or informal, or take any action on its own motion against Swarm Technologies concerning the matters that were the subject of the Investigation. The Commission also agrees that, in the absence of new material evidence, it will not use the facts developed in the Investigation through the Effective Date, or the existence of this Consent Decree, to institute on its own motion any proceeding, formal or informal, or to set for hearing the question of Swarm Technologies’ basic qualifications to be a Commission licensee or hold Commission licenses or authorizations.\(^{10}\)

12. **Admission of Liability.** Swarm Technologies admits for the purpose of this Consent Decree and for Commission civil enforcement purposes, and in express reliance on the provisions of paragraph 11 herein, that its actions in paragraphs 4-5 violated the Satellite Rules.

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\(^{10}\) See 47 CFR 1.93(b).
13. **Compliance Officer.** Within thirty (30) calendar days after the Effective Date, Swarm Technologies shall designate a regulatory compliance director with the requisite corporate and organizational authority to serve as a Compliance Officer and to discharge the duties set forth below. The person designated as the Compliance Officer shall be responsible for developing, implementing, and administering the Compliance Plan and ensuring that Swarm Technologies complies with the terms and conditions of the Compliance Plan and this Consent Decree. In addition to the general knowledge of the Communications Laws necessary to discharge his or her duties under this Consent Decree, the Compliance Officer shall have specific knowledge of the Satellite Rules prior to assuming his/her duties.

14. **Compliance Plan.** For purposes of settling the matters set forth herein, Swarm Technologies agrees that it shall, within sixty (60) calendar days after the Effective Date, develop and implement a Compliance Plan designed to ensure future compliance with the Communications Laws and with the terms and conditions of this Consent Decree. With respect to the Satellite Rules, Swarm Technologies will implement, at a minimum, the following procedures:

(a) **Operating Procedures.** Within thirty (30) calendar days after the Effective Date, Swarm Technologies shall establish Operating Procedures that all Covered Employees must follow to help ensure Swarm Technologies’ compliance with the Satellite Rules. Swarm Technologies’ Operating Procedures shall include internal procedures and policies specifically designed to ensure that prior to the operation of a radio frequency device intended to be used to communicate to or from a satellite in orbit, all such radio frequency devices are properly authorized and compliant with the Satellite Rules. Swarm Technologies shall also develop a Compliance Checklist that describes the steps that a Covered Employee must follow to ensure compliance with the Satellite Rules.

(b) **Compliance Manual.** Within sixty (60) calendar days after the Effective Date, the Compliance Officer shall develop and distribute a Compliance Manual to all Covered Employees. The Compliance Manual shall explain the Satellite Rules and set forth the Operating Procedures that Covered Employees shall follow to help ensure Swarm Technologies’ compliance with the Satellite Rules. Swarm Technologies shall periodically review and revise the Compliance Manual as necessary to ensure that the information set forth therein remains current and accurate. Swarm Technologies shall distribute any revisions to the Compliance Manual promptly to all Covered Employees.

(c) **Compliance Training Program.** Swarm Technologies shall establish and implement a Compliance Training Program to ensure compliance with the Satellite Rules and the Operating Procedures. As part of the Compliance Training Program, Covered Employees shall be advised of Swarm Technologies’ obligation to report any noncompliance with the Satellite Rules under the next paragraph of this Consent Decree and shall be instructed on how to disclose noncompliance to the Compliance Officer. All Covered Employees shall be trained pursuant to the Compliance Training Program within sixty (60) calendar days after the Effective Date, except that any person who becomes a Covered Employee at any time after the initial Compliance Training Program shall be trained within thirty (30) calendar days after the date such person becomes a Covered Employee. Swarm Technologies shall repeat compliance training on an annual basis, and shall periodically review and revise the Compliance Training Program as necessary to ensure that it remains current and complete and to enhance its effectiveness.

15. **Reporting Noncompliance.** Swarm Technologies shall report any noncompliance with the Satellite Rules and with the terms and conditions of this Consent Decree within fifteen (15) calendar days after discovery of such noncompliance. Such reports shall include a detailed explanation of: (i) each instance of noncompliance; (ii) the steps that Swarm has taken or will take to remedy such
noncompliance; (iii) the schedule on which such remedial actions will be taken; and (iv) the steps that the Swarm Technologies has taken or will take to prevent the recurrence of any such noncompliance. All reports of noncompliance shall be submitted electronically to Chief, Spectrum Enforcement Division, Enforcement Bureau, Federal Communications Commission at EB-SED-Response@fcc.gov.

16. **Pre-Launch Reporting:** Swarm Technologies shall for thirty-six (36) months after the Effective Date file Pre-Launch Reports under the below schedule for all of its satellites licensed by or with licenses pending before the Commission. Such reports shall include (i) the launch vehicle, (ii) the launch location, (iii) the launch coordinator and their contact information, (iv) the expected launch date, and (v) the expected integration date of the Swarm Technologies’ satellites onto the launch vehicle.

(a) Swarm Technologies shall provide Pre-Launch Reports (i) within five (5) calendar days of an agreement for a launch vehicle to carry Swarm Technologies’ satellites into orbit, but at least forty-five (45) calendar days prior to shipment or delivery of the satellites for integration (whichever of shipment or delivery occurs first), (ii) five (5) calendar days before the satellites are delivered or shipped (whichever occurs first) for integration, (iii) five (5) calendar days before the satellites are integrated into the launch vehicle, and (iv) five (5) calendar days before the expected launch date. In all instances, Swarm Technologies shall submit a request for authorization to the Commission prior to submitting the first Pre-Launch Report (required in subsection (i) above in this paragraph).

(b) If Swarm Technologies does not have authorization from the Commission to deploy and operate its satellites, Swarm Technologies will notify all launch services entities (e.g., operator, coordinator) associated with those satellites about the status of its authorizations simultaneous with its Pre-Launch Reports. Until an authorization is granted by the Commission, Swarm Technologies shall maintain the capability, through contractual, technical, and operational means, to remove its satellites from the launch vehicle. Swarm Technologies shall direct the removal of the satellites from the launch preparation process or launch vehicle prior to the point in launch preparations when the satellites would otherwise not be removable if authorization of the satellites remains pending at that time.

(c) All Pre-Launch Reports shall be submitted electronically to Chief, Spectrum Enforcement Division, Enforcement Bureau, Federal Communications Commission at EB-SED-Response@fcc.gov and to Stephen Duall, International Bureau, Federal Communications Commission at Stephen.Duall@fcc.gov.

17. **Compliance Reports.** Swarm Technologies shall file a compliance report with the Commission ninety (90) calendar days after the Effective Date, twelve (12) months after the Effective Date, twenty-four (24) months after the Effective Date, thirty-six (36) months after the Effective Date, forty-eight (48) months after the Effective Date, and sixty (60) months after the Effective Date.

(a) Each Compliance Report shall include a detailed description of Swarm Technologies’ efforts during the relevant period to comply with the terms and conditions of this Consent Decree and the Satellite Rules. In addition, each Compliance Report shall include a certification by the Compliance Officer, as an agent of and on behalf of Swarm, stating that the Compliance Officer has personal knowledge that Swarm Technologies: (i) has established and implemented the Compliance Plan; (ii) has utilized the Operating Procedures since the implementation of the Compliance Plan; and (iii) is not aware of any instances of noncompliance with the terms and conditions of this Consent Decree, including the reporting obligations set forth in paragraph 15 of this Consent Decree.

(b) The Compliance Officer’s certification shall be accompanied by a statement explaining the basis for such certification and shall comply with Section 1.16 of the
Rules and be subscribed to as true under penalty of perjury in substantially the form set forth therein.\textsuperscript{11}

(c) If the Compliance Officer cannot provide the requisite certification, the Compliance Officer, as an agent of and on behalf of Swarm Technologies, shall provide the Commission with a detailed explanation of the reason(s) why and describe fully: (i) each instance of noncompliance; (ii) the steps that Swarm has taken or will take to remedy such noncompliance, including the schedule on which proposed remedial actions will be taken; and (iii) the steps that Swarm Technologies has taken or will take to prevent the recurrence of any such noncompliance, including the schedule on which such preventive action will be taken.

(d) All Compliance Reports shall be submitted electronically to Chief, Spectrum Enforcement Division, Enforcement Bureau, Federal Communications Commission, at EB-SED-Response@fcc.gov

18. **Termination Date.** Unless stated otherwise, the requirements set forth in paragraphs 13 through 17 of this Consent Decree shall expire sixty (60) months after the Effective Date.

19. **Civil Penalty.** Swarm Technologies will pay a civil penalty to the United States Treasury in the amount of nine hundred thousand dollars ($900,000) within thirty (30) calendar days of the Effective Date. Swarm Technologies shall send electronic notification of payment to EB-SED-Response@fcc.gov on the date said payment is made. The payment must be made by check or similar instrument, wire transfer, or credit card, and must include the Account Number and FRN referenced above. Regardless of the form of payment, a completed FCC Form 159 (Remittance Advice) must be submitted.\textsuperscript{12} When completing the FCC Form 159, enter the Account Number in block number 23A (call sign/other ID) and enter the letters “FORF” in block number 24A (payment type code). Below are additional instructions that should be followed based on the form of payment selected:

- Payment by check or money order must be made payable to the order of the Federal Communications Commission. Such payments (along with the completed Form 159) must be mailed to Federal Communications Commission, P.O. Box 979088, St. Louis, MO 63197-9000, or sent via overnight mail to U.S. Bank – Government Lockbox #979088, SL-MO-C2-GL, 1005 Convention Plaza, St. Louis, MO 63101.

- Payment by wire transfer must be made to ABA Number 021030004, receiving bank TREAS/NYC, and Account Number 27000001. To complete the wire transfer and ensure appropriate crediting of the wired funds, a completed Form 159 must be faxed to U.S. Bank at (314) 418-4232 on the same business day the wire transfer is initiated.

- Payment by credit card must be made by providing the required credit card information on FCC Form 159 and signing and dating the Form 159 to authorize the credit card payment. The completed Form 159 must then be mailed to Federal Communications Commission, P.O. Box 979088, St. Louis, MO 63197-9000, or sent via overnight mail to U.S. Bank – Government Lockbox #979088, SL-MO-C2-GL, 1005 Convention Plaza, St. Louis, MO 63101.

Questions regarding payment procedures should be addressed to the Financial Operations Group Help Desk by phone, 1-877-480-3201, or by e-mail, ARINQUIRIES@fcc.gov.

20. **Waivers.** As of the Effective Date, Swarm Technologies waives any and all rights it may have to seek administrative or judicial reconsideration, review, appeal or stay, or to otherwise challenge

\textsuperscript{11} 47 CFR § 1.16.

\textsuperscript{12} An FCC Form 159 and detailed instructions for completing the form may be obtained at http://www.fcc.gov/Forms/Form159/159.pdf.
or contest the validity of this Consent Decree and the Adopting Order. Swarm Technologies shall retain
the right to challenge Commission interpretation of the Consent Decree or any terms contained herein. If
either Party (or the United States on behalf of the Commission) brings a judicial action to enforce the
terms of the Consent Decree or the Adopting Order, neither Swarm Technologies nor the Commission
shall contest the validity of the Consent Decree or the Adopting Order, and Swarm Technologies shall
waive any statutory right to a trial de novo. Swarm Technologies hereby agrees to waive any claims it
may otherwise have under the Equal Access to Justice Act\textsuperscript{13} relating to the matters addressed in this
Consent Decree.

21. **Severability.** The Parties agree that if any of the provisions of the Consent Decree shall
be held unenforceable by any court of competent jurisdiction, such unenforceability shall not render
unenforceable the entire Consent Decree, but rather the entire Consent Decree shall be construed as if not
containing the particular unenforceable provision or provisions, and the rights and obligations of the
Parties shall be construed and enforced accordingly.

22. **Invalidity.** In the event that this Consent Decree in its entirety is rendered invalid by any
court of competent jurisdiction, it shall become null and void and may not be used in any manner in any
legal proceeding.

23. **Subsequent Rule or Order.** The Parties agree that if any provision of the Consent
Decree conflicts with any subsequent Rule or Order adopted by the Commission (except an Order
specifically intended to revise the terms of this Consent Decree to which Swarm Technologies does not
expressly consent) that provision will be superseded by such Rule or Order.

24. **Successors and Assigns.** Swarm Technologies agrees that the provisions of this Consent
Decree shall be binding on its successors, assigns, and transferees.

25. **Final Settlement.** The Parties agree and acknowledge that this Consent Decree shall
constitute a final settlement between the Parties with respect to the Investigation.

26. **Modifications.** This Consent Decree cannot be modified without the advance written
consent of both Parties.

27. **Paragraph Headings.** The headings of the paragraphs in this Consent Decree are
inserted for convenience only and are not intended to affect the meaning or interpretation of this Consent
Decree.

28. **Authorized Representative.** Each Party represents and warrants to the other that it has
full power and authority to enter into this Consent Decree. Each person signing this Consent Decree on
behalf of a Party hereby represents that he or she is fully authorized by the Party to execute this Consent
Decree and to bind the Party to its terms and conditions.

29. **Counterparts.** This Consent Decree may be signed in counterpart (including electronically or by facsimile). Each counterpart, when executed and delivered, shall be an original, and all of the counterparts together shall constitute one and the same fully executed instrument.

________________________________
Rosemary C. Harold  
Chief  
Enforcement Bureau

________________________________
Date

________________________________
Sara Spangelo  
CEO  
Swarm Technologies, Inc.

________________________________
Date
STATEMENT OF
CHAIRMAN AJIT PAI

Re:  Swarm Technologies, Inc., File No.: EB-SED-18-00026685

As Chairman, I have substantially expanded the practice of providing Commissioners with 48 hours notice of significant actions to be taken on delegated authority, a practice that fell out of favor during the prior Administration. This is one part of my efforts over the course of the last 23 months to better inform and empower my fellow Commissioners.

Given the subject matter of this Consent Decree, I felt that it was appropriate to use this process here. That process, which incorporated my colleagues’ feedback, ultimately produced a better outcome.
STATEMENT OF
COMMISSIONER MICHAEL O’RIELLY

Re: Swarm Technologies, Inc., File No.: EB-SED-18-00026685

I support the underlying item and join my colleagues in making it clear that all entities seeking to launch satellites – no matter how large – and wishing to serve the U.S. market in any capacity must comply with the Commission’s rules. The size of the penalty imposed is probably not significant enough to deter future behavior, but the negative press coverage is likely to prevent this company and others from attempting to do this again.

This notwithstanding, I write a separate statement to notify the public, especially those who actively participate in Commission proceedings, that the Commission’s Enforcement Bureau may no longer have the final say in the size of consent decrees. While it is now informal policy that the full Commission will consider consent decrees that were negotiated after the adoption of a Notice of Apparent Liability (NAL), there have only been a few occasions where the full Commission has reviewed consent decrees entered into prior to a NAL.

Not long after being circulated and upon the request of two Commissioners, this item was referred to the Commission for consideration by the Chairman. I am always happy to vote on more items and am certainly not reluctant to remove previous delegations to staff, so such a step was welcome news. However, it should be noted that the original penalty negotiated between the party and the Enforcement Bureau was subsequently rejected by my colleagues. I take no real issue with their desire for a higher penalty, except that it is a new and diverging step to jettison an agreement reached between the bureau and a party on the size of a consent decree penalty. This eventually led to a reopening of negotiations with the party and the modification of the item.

Since I have raised concern with enforcement actions serving as precedent without the opportunity for interested parties to comment, everyone should now recognize that when negotiating a potential consent decree with Commission staff that it may be altered or adjusted by the Commissioners. Thus, this factor should be taken into consideration if and/or when any negotiations are initiated. I am hopeful that the Commission will make this change in practice official and well known so as not to surprise anyone in the future.