Approved by OMB
3060–0678

Date & Time Filed: Apr 10 2006 5:43:50:083PM
File Number: SAT–MOD–20060410–00041

Call sign: S2146

FCC APPLICATION FOR SPACE AND EARTH STATION:MOD OR AMD – MAIN FORM FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	FCC Use Only

APPLICANT INFORMATION
Enter a description of this application to identify it on the main menu:
AMC–15 modification

1–8. Legal Name of Applicant

Name:	SES Americom, Inc.	**Phone Number:**	609–987–4000 x4187
DBA Name:		**Fax Number:**	609–987–4233
Street:	4 Research Way	**E–Mail:**	nancy.eskenazi@ses–americom.com
City:	Princeton	**State:**	NJ
Country:	USA	**Zipcode:**	08540 –
Attention:	Ms. Nancy J. Eskenazi		

FEDERAL COMMUNICATIONS COMMISSION
GRANTED
International Bureau
w/conditions.

File # SAT-MOD-20060410-00041
Call Sign S2146 Grant Date June 8 2006
(or other identifier)
Term Dates
From Launch to operate To: + 15 yrs.
Approved: Policy Branch Chief

SAT-MOD-20060410-00041
AMC-15 satellite
Call-Sign: S2146
June 8, 2006

SES Americom, Inc.'s (SES Americom) request for a modification, IBFS File No.SAT-MOD-20060410-00041,[1] of its authorization to relocate its in-orbit hybrid Ka/Ku-band satellite, AMC-15, from 105° W.L. orbital location to the 105.05° W.L. orbital location IS GRANTED. Accordingly, SES Americom is authorized to operate its AMC-15 satellite at the 105.05° W.L. orbital location, with ±0.05° longitudinal station-keeping, in the 11.7-12.2 GHz (space-to-Earth), 14.0-14.5 GHz (Earth-to-space), 18.6-18.8 GHz and 19.7-20.2 GHz (space-to-Earth) and 28.4-28.6 GHz and 29.5-30.0 GHz (Earth-to-space) frequency bands. Other than the change in orbital location, the conditions contained in the prior authorization[2] otherwise remain in effect and the AMC-15 satellite will operate in accordance with the Commission's Rules, the terms, conditions, and technical specifications set forth in its application, the prior authorization, and this Attachment.

1. SES Americom is afforded thirty days from the date of this grant to decline this authorization as conditioned. Failure to respond within this period will constitute formal acceptance of the authorization as conditioned.

2. This Grant is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective upon release. Petitions for reconsideration under Section 1.106 or applications for review under Section 1.115 of the Commission's rules, 47 C.F.R. §§ 1.106, 1.115, may be filed within 30 days of the date of the public notice indicating that this action was taken.

GRANTED
International Bureau
w/conditions

File # SAT-MOD-20060410-00041
Call Sign S2146 Grant Date June 8, 2006
(or other identifier)
Term Dates
From launch To: + 15 yrs
Approved: Policy Branch Chief

[1] The modification application was placed on public notice on April 14, 2006. *See* Satellite Space Applications Accepted for Filing, Policy Branch Information, *Public Notice*, Report No. SAT-00354 (rel. April 14, 2006). No comments were filed.

[2] On August 18, 2004, the Policy Branch granted with conditions SES Americom's applications, SAT-LOA-20030219-00013, SAT-AMD-20030422-00069, SAT-AMD-20040615-00117, SAT-MOD-20030214-00011, and SAT-STA-20040622-00118 (Call Sign S2180), relating to AMC-15. *See* Actions Taken, Policy Branch Information, *Public Notice*, DA No. 04-2601, Report No. SAT-00236 (rel. August 20, 2004).

9–16. Name of Contact Representative

Name:	Karis A. Hastings	**Phone Number:**	202–637–5767
Company:	Hogan & Hartson L.L.P.	**Fax Number:**	202–637–5910
Street:	555 Thirteenth Street, NW	**E–Mail:**	KAHastings@hhlaw.com
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20004–1109
Attention:		**Relationship:**	Legal Counsel

CLASSIFICATION OF FILING

17. Choose the button next to the classification that applies to this filing for both questions a. and b. Choose only one for 17a and only one for 17b.

- ○ a1. Earth Station
- ◉ a2. Space Station

(N/A) b1. Application for License of New Station
(N/A) b2. Application for Registration of New Domestic Receive–Only Station
- ○ (N/A) b3. Amendment to a Pending Application
- ◉ (N/A) b4. Modification of License or Registration

b5. Assignment of License or Registration
b6. Transfer of Control of License or Registration
- ○ (N/A) b7. Notification of Minor Modification

(N/A) b8. Application for License of New Receive–Only Station Using Non–U.S. Licensed Satellite
(N/A) b9. Letter of Intent to Use Non–U.S. Licensed Satellite to Provide Service in the United States
- ○ (N/A) b10. Other (Please specify)

17c. Is a fee submitted with this application?

(●) If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R.Section 1.1114).

( ) Governmental Entity ( ) Noncommercial educational licensee

( ) Other(please explain):

17d.

Fee Classification BFY – Space Station Modification(Geostationary)

18. If this filing is in reference to an existing station, enter:	19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number:
(a) Call sign of station: S2180	(a) Date pending application was filed: (b) File number: SATLOA2003021900013

TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Select all that apply:

- [x] a. Fixed Satellite
- [ ] b. Mobile Satellite
- [ ] c. Radiodetermination Satellite
- [ ] d. Earth Exploration Satellite
- [x] e. Direct to Home Fixed Satellite
- [ ] f. Digital Audio Radio Service
- [ ] g. Other (please specify)

21. STATUS: Choose the button next to the applicable status. Choose only one.

○ Common Carrier ◉ Non−Common Carrier

22. If earth station applicant, check all that apply.

- [ ] Using U.S. licensed satellites
- [ ] Using Non−U.S. licensed satellites

23. If applicant is providng INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:

○ Connected to a Public Switched Network ○ Not connected to a Public Switched Network ◉ N/A

24. FREQUENCY BAND(S): Place an 'X' in the box(es) next to all applicable frequency band(s).

- [ ] a. C−Band (4/6 GHz)
- [x] b. Ku−Band (12/14 GHz)
- [ ] c.Other (Please specify upper and lower frequencies in MHz.)

Frequency Lower: Frequency Upper: (Please specify additional frequencies in an attachment)

TYPE OF STATION

25. CLASS OF STATION: Choose the button next to the class of station that applies. Choose only one.

- ○ a. Fixed Earth Station
- ○ b. Temporary–Fixed Earth Station
- ○ c. 12/14 GHz VSAT Network
- ○ d. Mobile Earth Station
- ◉ e. Geostationary Space Station
- ○ f. Non–Geostationary Space Station
- ○ g. Other (please specify)

26. TYPE OF EARTH STATION FACILITY:

○ Transmit/Receive ○ Transmit–Only ○ Receive–Only ◉ N/A

"For Space Station applications, select N/A."

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)

- ☐ a — authorization to add new emission designator and related service
- ☐ b — authorization to change emission designator and related service
- ☐ c — authorization to increase EIRP and EIRP density
- ☐ d — authorization to replace antenna
- ☐ e — authorization to add antenna
- ☐ f — authorization to relocate fixed station
- ☐ g — authorization to change frequency(ies)
- ☐ h — authorization to add frequency
- ☐ i — authorization to add Points of Communication (satellites & countries)
- ☐ j — authorization to change Points of Communication (satellites & countries)
- ☐ k — authorization for facilities for which environmental assessment and radiation hazard reporting is required
- ☒ l — authorization to change orbit location
- ☐ m — authorization to perform fleet management
- ☐ n — authorization to extend milestones
- ☐ o — Other (Please specify)

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. 1.1308 and 1.1311, as an exhibit to this application. A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments.	○ Yes ◉ No

ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aeronautical en route or aeronautical fixed radio station services are not required to respond to Items 30–34.

29. Is the applicant a foreign government or the representative of any foreign government?	○ Yes ◉ No
30. Is the applicant an alien or the representative of an alien?	○ Yes ◉ No ○ N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	○ Yes ◉ No ○ N/A
32. Is the applicant a corporation of which more than one–fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	○ Yes ◉ No ○ N/A

33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	(●) Yes ( ) No ( ) N/A
34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit an identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.	Exhibit A

BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules? If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.	( ) Yes (●) No
36. Has the applicant or any party to this application or amendment had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explination of circumstances.	( ) Yes (●) No

37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explination of circumstances.	○ Yes	◉ No
38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attemptiing unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition?If Yes, attach as an exhibit, an explanation of circumstances	○ Yes	◉ No
39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If yes, attach as an exhinit, an explanation of the circumstances.	○ Yes	◉ No
40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, address, and citizenship of those stockholders owning a record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.	Exhibit B	

41. By checking Yes, the undersigned certifies, that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes.	◉ Yes	○ No
42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43.	○ Yes	◉ No
42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?		

43. Description. (Summarize the nature of the application and the services to be provided). (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

See Attachment 1.

Attachment 1

CERTIFICATION

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Choose the button next to applicable response.)

- ○ Individual
- ○ Unincorporated Association
- ○ Partnership
- ◉ Corporation
- ○ Governmental Entity
- ○ Other (please specify)

45. Name of Person Signing	46. Title of Person Signing
Nancy J. Eskenazi	Vice President and Associate General Counsel

—>

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD–PERM, Paperwork Reduction Project (3060–0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to jboley@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

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THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104–13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.

FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of Application by	)	
	)	
SES AMERICOM, INC.	)	File No. SAT-MOD-20060410-00041
	)	
For Modification of AMC-15	)	
Fixed-Satellite Space Station License	)	

APPLICATION OF SES AMERICOM, INC.

SES Americom, Inc. ("SES Americom") hereby respectfully requests a modification of its license for the AMC-15 fixed-satellite space station to assign the satellite permanently to the 105.05° W.L. orbital location. SES Americom seeks to operate AMC-15 at a slight offset from the nominal 105° W.L. orbital position in order to simplify stationkeeping at this location. No other change in the operation of the satellite is proposed.

SES Americom has requested authority to relocate its Satcom C-4 spacecraft to 104.95° W.L., where the satellite will be operated by SES Americom's wholly-owned subsidiary SES Satellites (Gibraltar) Ltd. ("SES Gibraltar") pursuant to a license granted by the Gibraltar Regulatory Authority ("GRA").[1] The proposed offsets of AMC-15 and Satcom C-4 from the nominal 105° W.L. orbital position will eliminate any overlap of the stationkeeping volume, facilitating safe operation of

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1 *See* File No. SAT-STA-20060330-00034.

the satellites.[2] Accordingly, grant of the instant request will serve the public interest. A completed FCC Form 312 and a technical appendix are attached in support of this application.

AMC-15 is a Ku/Ka-band satellite that was launched on October 14, 2004, and is authorized to operate at the 105° W.L. orbital position. SES Americom seeks a modification of the AMC-15 license to permit operation at an offset once Satcom C-4 arrives at 105° W.L. Both AMC-15 and Satcom C-4 could operate centered at 105.0° W.L. by flying the satellites in formation to permit sharing of the same stationkeeping volume. However, such an arrangement would require an increased number of maneuvers to maintain an appropriate separation between the spacecraft. Furthermore, AMC-15 is fully stationkept, but Satcom C-4 will be operating in inclined orbit, making it more difficult to synchronize the movement of the satellites and keep a safe distance between them.

In order to simplify stationkeeping once Satcom C-4 arrives, SES Americom and SES Gibraltar propose to operate both satellites at slight offsets from the 105° W.L. nominal orbital position. The offsets will eliminate any overlap

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[2] In the event that the Commission has not acted on this license modification application at the time Satcom C-4 arrives at 105° W.L., SES Gibraltar and SES Americom will maintain their spacecraft with a tighter stationkeeping tolerance. Specifically, pending action on the AMC-15 modification, SES Gibraltar will operate Satcom C-4 centered at 104.9375° W.L., with an East-West stationkeeping tolerance of +/- 0.0375 degrees. SES Americom will operate AMC-15 centered at 105.0125° W.L., also with an East-West stationkeeping tolerance of +/-0.0375 degrees. Thus, Satcom C-4 will operate within a stationkeeping box bounded by 104.900° W.L. and 104.975° W.L, and AMC-15 will operate within a stationkeeping box bounded by 104.975° W.L. and 105.050° W.L.

of the stationkeeping volumes of the two spacecraft, thereby facilitating joint operations.

As demonstrated in the technical appendix, grant of the requested authority will not adversely affect any other operators. The nearest operational Ku-band satellites to 105° W.L. are SES Americom's AMC-1 at 103° W.L. and Telesat Canada's Anik F1 and F1R at 107.3° W.L. The nearest operational Ka-band satellites to 105° W.L. are DirecTV's Spaceway-1 at 102.8° W.L. and Telesat Canada's Anik F2 at 111.1° W.L. The small proposed shift in AMC-15's orbital location will have a *de minimis* effect on the interference environment in which adjacent satellites operate.

For the foregoing reasons, SES Americom seeks a modification of the AMC-15 license to assign the spacecraft to the 105.05° W.L. orbital location.

Respectfully submitted,

SES Americom, Inc.

By: */s/ Nancy J. Eskenazi*
Nancy J. Eskenazi
Vice President and
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Of Counsel
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Tel: (202) 637-5600

Dated: April 10, 2006

Technical Appendix

1. Introduction

This technical appendix is submitted in support of the application of SES Americom, Inc. ("SES Americom") for a modification of its license for the AMC-15 Ku/Ka-band spacecraft. SES Americom seeks permanent assignment of the spacecraft to 105.05° W.L. instead of 105° W.L. SES Americom incorporates by reference herein the technical information it has already provided with respect to AMC-15,[1] and provides here technical information that is changing as a result of the proposed modification.

2. Gain Contours

SES Americom is not submitting new contour maps with this application. The proposed shift in orbital location from 105° W.L. to 105.05° W.L. will produce no visible change in the gain contours from the maps already on file.

3. Link Budgets and Interference Analysis

The nearest operational Ku-band satellites to 105° W.L. are SES Americom's AMC-1 at 103° W.L. and Telesat Canada's Anik F1 and F1R at 107.3° W.L. The nearest operational Ka-band satellites to 105° W.L. are DirecTV's Spaceway-1 at 102.8° W.L. and Telesat Canada's Anik F2 at 111.1° W.L.

SES Americom has previously submitted interference analyses to the FCC demonstrating that operation of AMC-15 in the Ku-band and the Ka-band was compatible with adjacent satellites and with the Commission's two-degree spacing requirements.[2] The proposed offset operation of AMC-15 will not cause any material change to the interference environment. The proposed offset would result in AMC-15 moving slightly closer to Anik F1, Anik F1R, and Anik F2, but the resulting change in the interference environment will be negligible.

Specifically, as shown in the table below, SES Americom has calculated that implementation of the proposed offset would result in a change of approximately

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1 *See* File Nos. SAT-MOD-20030214-00011; SAT-LOA-20030219-00013; SAT-AMD-20030422-00069; SAT-AMD-20040615-00117.

2 File Nos. SAT-MOD-20030214-00011 & SAT-LOA-20030219-00013, Technical Appendix at Attachment B, Ku-Band Two Degree Spacing Analysis in Support of AMC-15, and Attachment C, Analysis with respect to Section 25.138 (Ka-Band Two Degree Spacing) in Support of AMC-15.

0.25 dB in the interference environment of two-degree compliant earth stations communicating in the Ku-band with Anik F1 or Anik F1R at 107.3° W.L.[3]

	107.3
Current Orbital Position (105) Closest Offset Angle, taking into account 0.05 degree stationkeeping	2.2
Gain (1) @ Offset angle	20.44 dB
Proposed Orbital Position (105.05) Closest Offset Angle, taking into account 0.05 degree stationkeeping	2.15
Gain (2) @ Offset angle	20.69 dB
Δ (Gain(1) - Gain (2))	*-0.25 dB*

Similarly, the small proposed shift in the AMC-15 orbital location will not materially change the interference environment for Ka-band operations. As noted above, the nearest operational Ka-band satellite to the west of AMC-15 is at 111.1° W.L., and thus will be greater than six degrees away from AMC-15 even with the proposed offset. The impact of the proposed offset on any future satellite located at the immediately adjacent 107° W.L. orbital location would also be immaterial. Ka-band antennas and Ku-band antennas exhibit the same 29 – 25 logΘ sidelobe envelope for two-degree spacing, so the calculations in the above table can be applied to Ka-band operations as well. Thus, the proposed offset would result in a change of approximately 0.25 dB in the interference environment of two-degree compliant earth stations communicating in the Ka-band with a future satellite at 107° W.L. SES Americom has demonstrated that AMC-15 complies with the off-axis EIRP density limits and PFD limits in Section 25.138 of the Commission's rules, and the proposed offset will have no effect on those values.

Given that the proposed offset operation of AMC-15 will not result in any material change to the interference environment with respect to AMC-15 and existing or future adjacent satellites, no link budget analysis is provided herein. In the unlikely event that any future concerns arise concerning operations of AMC-15 at the proposed offset location, SES Americom will coordinate with the adjacent operators in order to arrive at a mutually satisfactory solution.

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[3] Both Anik F1 and Anik F1R have been placed on the Commission's Permitted Space Station List, authorizing routinely-licensed U.S. earth stations to communicate with the spacecraft in the C- and Ku-bands. *See Telesat Canada*, Order, 15 FCC Rcd 24828 (Sat. and Rad. Div. 2000) (placing Anik F1 on the Permitted List); File No. SAT-PDR-20050504-00094, grant stamped with conditions, July 21, 2005 (placing Anik F1R on the Permitted List).

4. Orbital Debris Mitigation

This section provides the information required under Section 25.114(d)(14) of the Commission's Rules.

§ 25.114(d)(14)(i): SES Americom has assessed and limited the amount of debris released in a planned manner during normal operations of AMC-15. No debris is generated during normal on-station operations, and the spacecraft will be in a stable configuration. On-station operations require stationkeeping within the +/- 0.05 degree N-S and E-W control box, thereby ensuring adequate collision avoidance distance from other satellites in geosynchronous orbit.

In the event that co-location of this and another satellite is required, use of the proven Inclination-Eccentricity (I-E) separation method can be employed. This strategy is presently in use by SES ASTRA to ensure proper operation and safety of multiple satellites within one orbital box.

SES Americom has also assessed and limited the probability of the space station becoming a source of orbital debris by collisions with small debris or meteoroids that could cause loss of control and prevent post-mission disposal. SES Americom requires that spacecraft manufacturers assess the probability of micrometeorite damage that can cause any loss of functionality. This probability is then factored into the ultimate spacecraft probability of success. Any significant probability of damage would need to be mitigated in order for the spacecraft design to meet SES Americom's required probability of success of the mission. The design of AMC-15 locates all sources of stored energy within the body of the structure, which provides protection from small orbital debris. SES Americom has taken steps to limit the effects of any collisions through shielding, the placement of components, and the use of redundant systems.

§ 25.114(d)(14)(ii): SES Americom has assessed and limited the probability of accidental explosions during and after completion of mission operations. As part of the Safety Data Package submission for SES Americom spacecraft, an extensive analysis is completed by the spacecraft manufacturer, reviewing each potential hazard relating to accidental explosions. A matrix is generated indicating the worst-case effect, the hazard cause, and the hazard controls available to minimize the severity and the probability of occurrence. Each subsystem is analyzed for potential hazards, and the Safety Design Package is provided for each phase of the program running from design phase, qualification, manufacturing and operational phase of the spacecraft. Also, the spacecraft manufacturer generates a Failure Mode Effects and Criticality Analysis for the spacecraft to identify all potential mission failures. The risk of accidental explosion is included as part of this analysis. This analysis indicates failure modes, possible causes, methods of detection, and compensating features of the spacecraft design.

The design of the AMC-15 spacecraft is such that the risk of explosion is minimized both during and after mission operations. In designing and building the spacecraft, the manufacturer took steps to ensure that debris generation will not result from the conversion of energy sources on board the satellite into energy that fragments the satellite. All propulsion subsystem pressure vessels, which have high margins of

safety at launch, have even higher margins in orbit, since use of propellants and pressurants during launch decreases the propulsion system pressure. Burst tests were performed on all pressure vessels during qualification testing to demonstrate a margin of safety against burst. Bipropellant mixing is prevented by the use of valves that prevent backwards flow in propellant and pressurization lines. All pressures, including those of the batteries, are monitored by telemetry.

At the end of operational life, after the satellite has reached its final disposal orbit, all on-board sources of stored energy will be depleted or secured, and the batteries will be discharged.

§ 25.114(d)(14)(iii): SES Americom has assessed and limited the probability of the space station becoming a source of debris by collisions with large debris or other operational space stations. Specifically, SES Americom has assessed the possibility of collision with satellites located at, or reasonably expected to be located at, the requested orbital location or assigned in the vicinity of that location.

Regarding avoidance of collisions with controlled objects, in general, if a geosynchronous satellite is controlled within its specified longitude and latitude stationkeeping limits, collision with another controlled object (excluding where the satellite is collocated with another object) is the direct result of that object entering the allocated space.

The instant application seeks authority for operation of AMC-15 at a slight offset from the nominal 105° W.L. orbital location. SES Americom's subsidiary SES Satellites (Gibraltar) Ltd. proposes to operate Satcom C-4 in the C-band at 104.95° W.L. pursuant to a license from the Gibraltar Regulatory Authority. The two operators have already arrived at a plan for joint stationkeeping of the spacecraft, which is described above. During regular operation there are no other satellites assigned to or reasonably expected to be located at 105° W.L. or to nearby orbital locations such that there would be an overlap with the stationkeeping volume of AMC-15 at 105.05° W.L.

SES Americom also has a contract with an external laboratory that is monitoring encounters between satellites under SES Americom's control and some 500 active and inactive drifting objects. Any close encounters (separation of less than 5 km.) are flagged and investigated in more detail. If required, avoidance maneuvers are performed to eliminate the possibility of collisions.

During relocation, the moving spacecraft is maneuvered such that it is at least 30 km away from the synchronous radius at all times. In most cases, much larger deviation from the synchronous radius is used. In addition, the external laboratory's assistance is used to ensure no close encounter occurs during the move.

When de-orbit of a spacecraft is required, the initial phase is treated as a satellite move, and the same precautions are used to ensure collision avoidance.

§ 25.114(d)(14)(iv): Post-mission disposal of the satellite from operational orbit will be accomplished by carrying out maneuvers to a higher orbit. The upper stage engine remains part of the satellite, and there is no re-entry phase for either component. The fuel budget for elevating the satellite to a disposal orbit is included in the satellite design. SES Americom plans to maneuver AMC-15 to a disposal orbit with a minimum perigee of 276 km above the normal operational altitude. This proposed disposal orbit altitude is based on the following calculation pursuant to § 25.283 of the Commission's

Rules.

Area of the satellite (average aspect area): 56.35 m^2
Mass of the spacecraft: 1983.7 kg
C_R (solar radiation pressure coefficient): 1.45

Therefore the Minimum Disposal Orbit Perigee Altitude, as calculated under the IADC formula is:

36,021 km + (1000 x C_R x A/m) = 36062 km, or 276 km above the GSO arc (35,786 km)

SES Americom intends to reserve 13.3 kg of fuel in order to account for post-mission disposal of AMC-15. SES Americom has assessed fuel gauging uncertainty and has provided an adequate margin of fuel reserve to address the assessed uncertainty.

5. Schedule S

As discussed above, the proposed modification of the AMC-15 license to offset the satellite by 0.05 degrees from 105° W.L. will not result in any material changes to the spacecraft's operating characteristics or to the interference environment. As a result, the information requested in Schedule S duplicates information that is already on file with the Commission concerning the technical parameters of AMC-15's operation. In similar cases involving requests for slight offsets from the nominal orbital position, the Satellite Division has not required the submission of a new Schedule S.[4] Accordingly, SES Americom is not filing a new Schedule S with this application. SES Americom will nevertheless prepare and submit a Schedule S if requested to do so by the Satellite Division.

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[4] *See, e.g.*, File No. SAT-MOD-20040405-00076 (PanAmSat request for authority to operate SBS-6 at 74.05° W.L. rather than 74.0° W.L.).

DECLARATION OF KRISH JONNALAGADDA

I, Krish Jonnalagadda, hereby certify under penalty of perjury that I am the technically qualified person responsible for preparation of the technical information contained in the foregoing exhibit; that I am familiar with the technical requirements of Part 25; and that I either prepared or reviewed the technical information contained in the exhibit and that it is complete and accurate to the best of my knowledge, information and belief.

/s/ Krish Jonnalagadda
Manager, Satellite Market Development
SES Americom, Inc.

Dated: April 10, 2006