

## DAYTIME SKYWAVE, DOCKET NO. 8333:

Amendment of section 1.351 of Commission's rules:

Memorandum opinion and order denying petitions for reconsideration of report and order and for stay of changes in rules effective November 30, 1959.

*Petitions for reconsideration requesting greater limitation on daytime radiation by class II stations.*—Denied.

*Petitions for reconsideration seeking relaxation of restrictions imposed by new section 3.38 on future authorization of limited-time stations.*—Denied, except insofar as relief requested has been granted by modification of section 3.38 in supplemental report and order adopted October 21, 1959.

*Petitions for stay of effective date of changes in rules (November 30, 1959).*—Denied.

*Petition for amendment of section 1.351 of rules so as to reimpose the "freeze" on processing of class II applications on I-B channels 1500 kc. and above.*—Denied.

BEFORE THE

## FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON 25, D.C.

In the Matters of PROMULGATION OF RULES AND REGULATIONS AND STANDARDS OF GOOD ENGINEERING PRACTICE CONCERNING DAYTIME SKYWAVE TRANSMISSIONS OF STANDARD BROADCAST STATIONS AND AMENDMENT OF SECTION 1.351 OF THE COMMISSION'S RULES	}	Docket No. 8333
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## MEMORANDUM OPINION AND ORDER

(Adopted December 9, 1959)

BY THE COMMISSION: COMMISSIONERS HYDE AND CRAVEN ABSENT.

## 1. The Commission has before it for consideration:

(1) Its report and order (FCC 59-970), in this proceeding, adopted September 18, 1959, released September 22, 1959, and supplemental report and order (FCC 59-1072), adopted October 21, 1959, released October 28, 1959.

(2) Petitions for reconsideration of our report and order herein (and in some cases also petitions for stay of the effective date of the changes in the rules adopted herein), and for reconsideration of our action of the same date amending section 1.351 of our rules (the "freeze" rule), filed by the following parties as licensees, or representing licensees, of class I stations, and in general seeking limitations on the operation of class II stations greater than those which we adopted in our report and order and supplemental report and order:

- (a) Clear Channel Broadcasting Service (CCBS).
- (b) Columbia Broadcasting System, Inc. (CBS).
- (c) Crosley Broadcasting Corp., licensee of station WLW. Cincinnati.

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(d) National Broadcasting Co., Inc., (NBC).

(e) Radio Service Corp. of Utah, licensee of KSL, Salt Lake City.

(3) Petitions for reconsideration of that portion of our report and order dealing with limited-time stations and adding new section 3.38 to our rules, filed by the licensees of five limited-time class II stations—KJBS, San Francisco; KPOP, Los Angeles; KXA, Seattle; WNYC, New York City; and WOSU, Columbus, Ohio. For the most part, the position of these parties that new section 3.38 is too restrictive has been met by our action, in our supplemental report and order, modifying the limitations imposed by this section. Some of these parties also request a stay of this portion of our report and order.

(4) Opposition to petitions for reconsideration or rehearing and for stay and motion to accept late filing, filed November 5, 1959, by Daytime Broadcasters Association.

2. The above-referenced report and order and supplemental report and order terminate the instant proceeding and, in substance, modify part 3 of the Commission's rules so as to: (1) render applicable to authorizations for new class II stations and certain specified modifications of existing class II operations on U.S. class I channels, a criterion designed to limit interference to the service of the class I stations on these channels caused by daytime skywave radiation from cochannel class II stations; (2) preclude authorization of new limited-time stations and of certain specified modifications of existing limited-time operations; (3) impose certain limitations upon presunrise operation by new class II stations and existing class II stations with changed facilities.

3. The criterion referred to in the preceding paragraph comprises a set of permissible radiation charts for 500 kc., 1000 kc., and 1600 kc., respectively, and a procedure for determining therefrom the maximum radiation which a class II station operating on a particular frequency is permitted to direct, during the two postsunrise and two presunset hours, along a radial of particular azimuth, for a particular distance to the nearest point on the 0.1-mv./m. contour of a cochannel U.S. class I station. This criterion was included in the Commission's proposed report and order notice of further proposed rulemaking and order (FCC 54-333), adopted March 11, 1954, released March 12, 1954, wherein its derivation and the reasons for its selection from among the various possible criteria are discussed at length. In the report and order adopted on September 12, 1959, the Commission affirmed both the need for a criterion applicable to the limitation of daytime skywave interference to class I stations, and the preferability of this particular criterion over all alternatives.

4. Clear Channel Broadcasting Service, in support of its petition for rehearing, states that: (1) " \* \* \* at least in those instances where because of the time differential or distance involved, existing limited-time stations are causing severe or extreme interference to class I stations in underserved areas, consideration [should] be given \* \* \* to requiring the [existing] limited-time stations

either to cease operation at local sunset or to restrict radiation in the direction of the class I stations to a degree sufficient to afford protection to the class I station"; (2) " \* \* \* two fundamental errors \* \* \* so dilute the degree of protection [to be] afforded class I-A stations in particular, as to make it almost meaningless. \* \* \* These \* \* \* are the use of sunset minus 2 hours as the time at which the amount of daytime skywave against which protection will be afforded class I stations is determined, and the use of inaccurate diurnal curves based on inadequate data." CCBS includes data illustrating the greater degrees of protection which would be afforded class I stations by limitations based on sunset minus 1 hour and sunset conditions, respectively, and notes that, even at sunset minus 2 hours, there would be instances of objectionable skywave interference under the terms of the Commission's limiting standard. CCBS also states that: " \* \* \* the Commission's diurnal curves for time periods earlier than SS-1 are not supported in any way by measured data. They are pure extrapolations from curves based on measured data for suntime hours between SS-1 and SS+2 \* \* \* [and] disregard entirely the trends of daytime skywave field intensities during hours prior to SS-1. \* \* \* The fact that the extrapolations in the FCC diurnal curves were subject to question was admitted by the Commission engineering witness (R. 74-75). \* \* \* The CCBS diurnal curves [which are based on Commission measurements] as compared with the FCC diurnal curves show clearly that the daytime skywave field intensities are substantially stronger at the lowest frequencies (500 kc.), slightly stronger at the midfrequencies (1000 kc.), and weaker at the high frequencies (1500 kc.) at SS-2 than shown on the FCC diurnal curves. \* \* \* [Accordingly] it is clearly evident that in the frequency range to which class I-A stations are assigned (640 kc.-1210 kc.) substantially greater interference to class I-A stations at SS-2 will result by use of the CCBS diurnal curves. \* \* \*" CCBS proposes sunset as the point of time reference for daytime skywave and CCBS diurnal curves as a basis for limitation in lieu of the FCC diurnal curves; (3) " \* \* \* an allocations study [should] be undertaken to determine which class II stations can be changed from their present class I channels to other class I or class III channels to accomplish a minimum mileage separation of 1,200 miles between existing class I and class II stations. \* \* \*"

5. CCBS requests that: (1) The Commission's report and order, adopted September 18, 1959, be stayed pending final action on its petition for rehearing; (2) action on applications involving class I frequencies be stayed until final action by the Commission on all timely filed petitions for rehearing or reconsideration of the Commission's report and order in docket No. 8333 or final action in docket 6741, whichever is later, and that section 1.351 be amended to so provide.

6. Columbia Broadcasting System, in support of its petition for reconsideration, states that: (1) " \* \* \* the proposed rules are based upon an erroneous evaluation of skywave propagation conditions at the hour selected as the basis for protection \* \* \* they are predicated on the assumption that at sunset minus 2 hours, skywave propagation varies considerably with frequency. \* \* \* While there is no dispute

that during the period of rapid buildup in the value of skywave transmissions from sunset minus 2 hours until full nighttime conditions are reached, skywave propagation may vary with frequency essentially as assumed by the Commission, there is no data in the record with respect to any such variation at sunset minus two hours. Accordingly, it is inappropriate for the Commission to have concluded \* \* \* that at sunset minus 2 hours, skywave propagation varies with frequency. The determination of conditions at that time was in turn based upon an extrapolation of data for later periods. This extrapolation excluded consideration of pertinent data for the period preceding sunset minus 2 hours—data which suggest that the value of skywave transmissions at sunset minus 2 hours may, in fact, be greater \* \* \* [than assumed by the Commission] at least at the lower frequencies. \* \* \* [Thus], under the Commission's assumption, the proposed rules may impose little or no restrictions on class II stations on lower frequencies \* \* \*"; (2) daytime skywave limitation should be based on mileage separation alone, without regard to frequency; (3) alternatively, daytime skywave limitation should be based on sunset-minus-1-hour conditions, in view of the " \* \* \* well-defined and generally accepted frequency effect \* \* \*" at that time; (4) the Commission should create an industry committee to assist it in reviewing the data in the record and studying any new data which may be available; (5) as an interim measure, pending the report of such committee, the Commission might adopt, if indicated, the 1600 kc. or most restrictive limitation from its standard and apply this limitation to all frequencies.

7. Crosley Broadcasting Corp. licensee of station WLW, Cincinnati, Ohio, states, in support of its petition for reconsideration or rehearing, that: (1) \* \* \* "a modification of license of class I stations would result should the proposed amended rules be adopted \* \* \* [as] these radiation curves do not afford the necessary protection to class I stations \* \* \* during the transition period. This is based upon the fact that these curves were predicated upon propagation conditions 2 hours after sunrise and 2 hours prior to sunset. Thus, there are a total of 4 hours of the normal broadcast day during which a varying degree of cochannel daytime interference to class I stations would be permitted to exist. \* \* \* To accomplish adequate protection to class I stations \* \* \* it is necessary to consider the propagation conditions at the times of sign-on and signoff of the class II stations. \* \* \*" (2) " \* \* \* the permissible radiation curves were obtained from time periods when these diurnal curves were extrapolated. The accuracy of extrapolations are questioned in view of the engineering data contained in the modified CCBS diurnal curves. \* \* \* Likewise, it should be noted that the Commission's engineering witness who testified in this proceeding admitted that the extrapolations were subject to question. \* \* \*" In its request for stay order, Crosley Broadcasting Corp. submits that "no loss of service would result to any existing broadcast station, [and] conversely, the adoption of the Commission's report and order and the resulting amendment of the rules would permit the consideration of additions and/or changes in class II broadcasting facilities and the same would be prejudicial to the inter-

ests of class I stations pending the consideration and finalizing of this proceeding.”

8. National Broadcasting Co., Inc., in the above-referenced petition for reconsideration and stay, claims that: (1) “The report and order is neither supported by nor in accordance with reliable, probative, and substantial evidence, but is inconsistent with such evidence of record. \* \* \* Since the Commission has chosen to protect the 0.1-mv/m. groundwave of class I stations near the beginning of the skywave transmission period (sunset minus 2 hours), the validity of the permissible radiation curves as of that time is of crucial significance in this proceeding \* \* \* the Commission’s expert engineering witness testified that ‘\* \* \* a plot of the ratio of the field intensity in the second hour before sunset to the field in the second hour after sunset did not define a trend line, and so afforded us no sound basis for extending the diurnal curve \* \* \* to hours earlier than the first hour before sunset’ (official report of proceedings, June 4, 1947, pp. 14-15); [and] that the extensions of the curve represent ‘extrapolations’ and were not drawn on the basis of measured data. \* \* \* Thus, although the Commission’s own expert witness testified that there was ‘no sound basis for extending the diurnal curve \* \* \* to hours earlier than the first hour before sunset,’ the Commission nevertheless adopted \* \* \* these very curves. \* \* \* The Commission’s own measurements submitted in this proceeding \* \* \* show that that portion of the diurnal curves relating to the second hour before sunset is invalid. The skywave field intensity measurements made by the Commission and introduced into this proceeding included measurements for the second hour before sunset [which] \* \* \* were not used in the preparation of the diurnal curves from which the Commission established the working points of its present proposal, but NBC has prepared a graph showing the lack of correlation between the [extrapolated portion of the FCC] curve and the [‘Commission’s own’] measured values. \* \* \* [Thus] the Commission’s own data in this record shows that the use by the Commission \* \* \* of the ‘extrapolated’ portions of the diurnal curves is without engineering justification. \* \* \*” (2) “The report and order is inconsistent with the public interest, convenience, and necessity in that the permissible radiation curves adopted therein would violate the very standards of protection which the Commission states it is seeking to establish. \* \* \* The permissible radiation curves are in error and thereby permit higher interfering signals, as much as five times greater than anticipated, by class II stations operating at the lower frequencies. \* \* \* All the Commission measurements indicate that there is negligible frequency effect at sunset minus 2. However, the curves adopted by the Commission are substantially different for the higher and lower frequencies. \* \* \* It should be recognized [also] that use of sunset minus 2 to determine the limits of permissible radiation effectively confines protection to the class I station to that instant in the evening transition period. From that moment until the signoff of the class II station, several hours later, skywave interference has rapidly built up.”

9. Radio Service Corp. of Utah, licensee of station KSL, states, in support of its petition for reconsideration, that: (1) “\* \* \* a median

level of interference for the 2-hour period preceding sunset and the similar period following sunrise would be a more meaningful measure of the interference to be permitted than the rule adopted by the Commission. \* \* \* The Commission should base its protection criteria on SS-1 interfering field intensities \* \* \* [and] standardize upon the 100-uv./m. groundwave contour of class I stations as the contour to be protected. \* \* \*” (2) “The Commission’s report and order appears to ignore the cumulative effect of several interfering signals on class I-A station service areas \* \* \* [which] poses a threat which would further degrade the services to areas dependent largely or entirely on service from clear channel stations.” (3) [The Commission should] “eliminate the bonus hours of existing limited time stations [which provide] \* \* \* a multitude of radio services to urban areas at the expense of sparsely settled rural areas \* \* \* which is hardly consistent with the overall public interest.” (4) [The Commission should] “stay the effectiveness of the report and order until a ruling is made on this petition for reconsideration and any other similar petitions filed in this proceeding.”

10. Daytime Broadcasters association, in its opposition to petitions for reconsideration or rehearing and for stay, states that: (1) “\* \* \* It is shocking in the extreme that after numerous proceedings over more than a dozen years, consisting of comments, evidentiary hearings, and oral arguments \* \* \* [there] should have [been] the temerity to seek reconsideration and stay of the Commission’s report and order in this proceeding. \* \* \* Matters relied upon \* \* \* [in support of the requests for reconsideration and stay] are identical to the claims advanced \* \* \* over the course of the past dozen years and were fully considered and reconsidered by the Commission in these proceedings and were previously spelled out by the Commission in its tentative and proposed decision.” (2) “There is no justification after all of these years for \* \* \* continu[ing] the freeze \* \* \* [which has meant] withhold[ing] consideration of and action upon a large number of frequencies which constituted a substantial portion of the radio spectrum that had been allocated to the standard broadcast service [with] the result [of creating] an artificial scarcity of frequencies available for the establishment and successful operation of local standard broadcast stations \* \* \* [while] clear channel stations continued to enjoy huge protected service areas which, with the passage of years, were less and less justified on the basis of the service rendered and the needs and interests of the communities located within these areas.” In its motion to accept late filing, DBA states that the 1-day lateness was due to a 3-day lapse between filing date with the Commission and DBA’s receipt of certain of the above-referenced petitions.

#### *Contentions Made by the Clear-Channel Stations*

11. The arguments made in the petitions of CCBS and the clear-channel licensees mentioned above may be divided into three categories: (1) those attacking the standard of protection against daytime skywave interference as it exists at sunset minus 2 hours—adopted in

our report and order; and urging a more restrictive standard such as sunset minus 1 hour or sunset; (2) those attacking the validity of the permissible radiation curves from a technical standpoint; and (3) other contentions.

12. *Adequacy of protection to be afforded class I stations.* Several of the petitioners (CCBS, NBC, stations KSL and WLW) oppose the adoption of the permissible radiation curves on the grounds that the degree of protection afforded class I stations on the basis thereof is inadequate. The licensee of station KSL proposes alternatively a criterion of limitation of daytime skywave interference based upon conditions at 1 hour instead of 2 hours before sunset. Other petitioners seek instead a measure of protection based upon propagation conditions at sunset. Data have been submitted indicating that the Commission's criterion, based on conditions at sunset minus 2 hours, will allow considerable interference from daytime skywave propagation at various times within the intervals under consideration, and that a more restrictive criterion would permit less objectionable interference during these periods.

13. The matter of the balance between the degree of protection to be afforded class I stations and the degree of restriction to be placed upon class II stations has been covered exhaustively in hearings, oral arguments, and comments from interested parties over a period of years, and in the Commission's proposed report and order of March 11, 1954, and report and order of September 18, 1959. The Commission is well aware that its criterion will not insure the protection of the 0.1-mv./m. groundwave contour of every class I station throughout the entire postsunrise and presunset period, and also that the substitution therefor of some other criterion, such as those proposed by CCBS, KSL, and WLW, would result in less extensive daytime skywave interference to class I stations. These and related facts have been taken into thorough consideration, with the result that the present criterion, based on the requirements for protection to the 0.1-mv./m. contour at sunset minus 2 hours, has been selected as "representing a reasonable balance" between permitting excessive interference and imposing prohibitive restrictions on class II stations. As we pointed out in our September 1959 report and order (par. 17), we must keep in mind "the necessity of reaching an appropriate balance between the objectives of sufficient protection and provision for adequate service by a sufficient number of stations during daytime hours." We affirm the decision therein reached.

14. With regard to the CCBS data indicating that the Commission's criterion does not afford protection from objectionable interference at sunset minus 2 hours in every instance, we are of the opinion that this in no way invalidates the use of this criterion. The Commission is not committed to afford, and has not stated that it would afford, absolute protection from daytime skywave interference at sunset minus 2 hours or at any other particular time. The criterion adopted is based upon skywave propagation conditions at sunset minus 2 hours; in the interest of simplification, however, it was necessary to generalize or select average values for certain factors. While the criterion does not afford complete second-hour protection in every

instance, on an overall basis it affords the degree of protection to the service of class I stations which, on balance, we have considered to be most desirable.

15. In the interest of simplicity, also, computation of interfering signals was avoided in the formulation of the procedure for determining maximum permissible radiation. It is not possible without adopting some other, necessarily considerably more complicated, scheme of determining permissible radiation, to take into account the cumulative effect of several interfering signals, as suggested by station KSL. Whatever benefit might be gained from the adoption of such a different approach is outweighed by the complication involved, and accordingly the suggestion must be rejected.

16. *Validity of permissible radiation curves.*—With regard to the objections of NBC, CCBS, CBS, and WLW to the use of extrapolated data as a basis for the maximum permissible radiation curves, this matter has been considered thoroughly and reviewed in detail in the record prior to the referenced report and order. The pertinent background may be summarized as follows: (1) on the basis of 6 years of recorded measurements made on 17 transmission paths, values representative of the 10-percent skywave field intensity were derived for various frequencies at several times with respect to sunset; (2) for each frequency, a ratio was obtained of the value at a particular time and the value at the time of sunset plus 2 hours; these ratios are hereinafter referred to as the SS+1, SS, SS-1, and SS-2 data; (3) when the data for SS+1, SS, and SS-1 was plotted, a certain trend was clearly apparent in each instance and curves of the ratio versus frequency were drawn for each of these three times; in each instance, the ratio increases with frequency, this increase being most marked at SS-1 and least marked at SS+1; (4) when the corresponding set of ratios for SS-2 was studied, it was found to define no trend at all, and to comprise nothing more than an isolated set of values forming no basis for any conclusion as to skywave propagation at SS-2; (5) it was thought that groundwave propagation had been included in the readings at SS-2 and that the values therefrom obtained were therefore useless for the present purpose; (6) according to accepted theory, the absorption coefficient of skywave during daytime hours is considered to be simply related to the cosine of the sun's zenith angle, so that in the neighborhood of sunrise and sunset the diurnal curve should have, in logarithmic units, a rather long straight section; on this basis, SS+1, SS, and SS-1 data may be extended back to SS-2 by straight line extrapolation on logarithmic paper; (7) this last has been done, the values obtained from measurements at SS-2 being discarded in favor of the extrapolations from values obtained from measurements at SS-1, SS, and SS+1; (8) the criterion adopted in the report and order and the earlier proposed report and order is based upon limitation of class II station radiation to a level which, under the propagation conditions indicated by the extrapolated data for SS-2, will not invade the protected contour of the class I station.

17. To summarize, (1) data based on post-SS-2 measurements followed a consistent pattern which was in accordance with skywave transmission theory; (2) data based on SS-2 measurements departed

from this pattern and could not be explained on the basis of skywave transmission theory; (3) accordingly, it was believed that certain of the SS-2 measurements reflected factors other than skywave propagation; (4) the Commission regarded the SS-2 measurements as inconclusive and resorted to extrapolation from post-SS-2 measurements in accordance with accepted mathematical procedures and with the best understanding of skywave propagation phenomena. The Commission's measurements, and the evaluation thereof described above, have not been supplemented by any substantial body of additional measurements by any party herein, nor have any pertinent modifications of basic theory been advanced.

18. The objection that the extrapolated data does not agree with the data derived from SS-2 measurements is therefore without basis, since, as pointed out in the preceding paragraph, extrapolation from post-SS-2 data was resorted to for the very reason that the SS-2 data based on measurements did not afford a sound basis on which to proceed. The extrapolated data would thus be expected to differ from the data based on SS-2 measurements. The statistical averaging process adopted here is no different from that used in numerous places in our standard broadcast standards such as average receiver rejection used for establishing interference ratios.

19. With regard to the testimony of the Commission's engineering witness quoted in the NBC petition and set forth above (par. 8), the testimony quoted meant that on the basis of measurements and ratios for each frequency the diurnal curves could be acceptably extended for times before sunset only as far as sunset minus 1 hour, since the SS-2 measurements, and ratios based thereon, established no trend line from which the diurnal curve could be extended, *on this basis*, to an earlier moment in time such as SS-2. The witness was then asked: "The dotted lines [for times earlier than SS-1] represent extrapolations?" He answered: "That is correct, they represent extrapolations. These extrapolations are made on the basis of the following sort of consideration: On rather sound theoretical grounds it is known or believed that the absorption that characterizes the diurnal curve is simply dependent upon the cosine of the sun zenith angle, so that the diurnal curve, as plotted on logarithmic paper, would be the loop of the cosine curve. The portion of that cosine group in the neighborhood of sunset will be, to a pretty good approximation, a rather long straight line. So that with same assurance the diurnal curve can be extrapolated to a straight line for some distance to earlier times." If the two portions of the witness' testimony are read in sequence as they appear in the record, it is clearly apparent that it is the SS-2 measurements which "afforded us no sound basis for extending the diurnal curve—to hours earlier than (SS-1)," and that it is the extrapolated data which rests upon "rather sound theoretical grounds"—and can be accepted "with some assurance." Therefore NBC's summarization of the Commission witness' testimony as being that "there was no sound basis for extending the diurnal curve \* \* \* to hours earlier than the first hour before sunset" is erroneous.

20. The attack on the validity of the criterion which we have adopted, is largely aimed at our conclusion, on which the criterion is

based, that at SS-2, as at later times, skywave propagation efficiency varies with frequency so that it is less at lower frequencies and greater at higher frequencies. Some of the petitioners argue that, at SS-2, skywave propagation efficiency is approximately the same for all of the standard broadcast frequencies; others, that, at this point in time, transmission efficiency is greater in the lower frequencies. These conclusions are said to be supported by the SS-2 measurements. For reasons just stated, these measurements were disregarded in the preparation of the diurnal curves and the permissible-radiation curves, which instead were based on a sound extrapolation process which clearly supports our earlier conclusion that skywave propagation is less at the lower frequencies and greater at the higher. In any event, even if these SS-2 measurements were assumed to be significant and to establish definitely a different relationship between frequency and skywave radiation at SS-2, we would not be justified in basing a limitation upon them, because of the very obvious fact that the limitation is to apply during 4 hours per day (2 hours before sunset and 2 hours after sunrise), and the variation of skywave transmission efficiency with frequency during the major portion of this period, with the greater efficiency occurring in the higher frequencies, has been definitely established by measurements and has been acknowledged by all interested parties.

21. *Other contentions of the clear channel parties.*—CBS has suggested the following alternatives to the Commission's criterion: (1) that SS-2 data be utilized in the form of a simple radiation versus mileage restriction irrespective of frequency; (2) alternatively, that SS-1 data which shows frequency radiation be utilized as the basis for a criterion similar to that derived by the Commission on the basis of the extrapolated SS-2 data; (3) alternatively, that a limitation based on the extrapolated SS-2 data for 1600 kc., which is the most restrictive limitation under the FCC criterion, be applied to all frequencies, as an interim measure, and that an industry committee be appointed to study daytime skywave propagation and recommend some appropriate standard of protection. These suggestions must be rejected, for reasons already stated in connection with our adoption of SS-2 conditions as the basis for protection and the validity of our criterion. As to the suggestion concerning an industry committee, the matters involved here have been gone into thoroughly during the extended course of this proceeding, and there is no warrant for postponing the final resolution of this proceeding pending further study as proposed.

22. *Existing limited-time stations.*—One petitioner (KSL) has requested that "bonus hours" of operation for existing limited-time stations—hours after local sunset but before sunset at the location of the cochannel channel I station—be eliminated; another (CCBS), that existing limited-time stations be required to modify their present operations, if necessary to afford protection to their respective cochannel, class I stations, or to relinquish their "bonus hours." In the report and order adopted September 18, 1959, it was concluded that existing service, "to which listeners have become accustomed and have come to rely upon," is of positive value and that it is not in the public

interest to curtail or disrupt such service. We reached this conclusion both as to existing class II operations during daytime hours and as to operation by existing limited-time stations during "bonus hours." (See pars. 21, 24.) We adhere to this conclusion.

23. CCBS has proposed that an allocations study be undertaken to determine which of the existing class II stations can be changed from their present class I channels to other class I or class III channels to accomplish a minimum mileage separation of 1,200 miles between co-channel class I and class II stations. The Commission is of the opinion, however, that such a study would involve dislocations and the expenditure of time and effort disproportionate to the limited service gains which, at best, could be expected to result.

24. *Argument that the new rules would result in "modification of license" of class I stations.*—Crosley (WLW) urges that adoption of the rules promulgated in our September report and order would result, in effect, in "a modification of license of class I stations \* \* \*" because with the limitation adopted some daytime skywave interference would occur, at some times, within the 0.1-mv./m. contours of class I stations.

25. This contention must be rejected. As we pointed out in our September 1959 report and order (pars. 2 and 3), section 303(f) of the Communications Act directs the Commission to "make such regulations not inconsistent with law as it may deem necessary to prevent interference between stations. \* \* \*" It is left to the Commission to determine what interference is objectionable, and what degree of protection against objectionable interference should be imposed. Our rules as they existed prior to our September report and order did not recognize daytime skywave interference. We have reached a determination that such interference exists, and that in the case of new class II facilities (and certain changes in existing class II facilities) restrictions should be imposed to limit the extent of this interference. This decision we have implemented through permissible-radiation curves, designed to afford a reasonable degree of protection to the service of U.S. class I stations against daytime skywave interference. We recognize, as mentioned above, that the protection at SS-2 will not be complete in all cases; but there is no practicable means by which a general standard can be evolved which will achieve complete protection in all cases without being unduly restrictive in many situations. The imposition of these restrictions, and subsequent licensing of facilities on the basis thereof, in no sense will amount to a "modification of license," but is rather the imposition of an additional restriction designed to afford reasonable protection to the service of class I stations.

#### *Petitions Filed by Limited-Time Class II Stations*

26. As mentioned above, the licensees of five limited-time Class II stations (KJBS, KPOP, KXA, WNYC, and WOSU) filed petitions seeking reconsideration of our September report and order insofar as it adopted new section 3.38 of the rules. As adopted in that document, section 3.38 provided that "no authorization for new class II

limited-time facilities will be granted," and no authorization for modification of existing class II limited-time facilities would be granted involving a change in frequency, an increase in power, a change in antenna radiation pattern, or a change in station location. The following arguments are made in these five petitions in opposition to what is called the "freeze" thus imposed on limited-time operations: (1) the restriction on limited-time operations was not within the scope of the notice of proposed rulemaking issued in this proceeding in 1947, which related to daytime transmission and interference; (2) while the proposed report and order adopted in March 1954 afforded notice that the Commission contemplated a rule requiring all limited-time stations to sign off at local sunset (thereby ending, both for existing and for future limited-time operations, the "bonus hours" enjoyed by such stations located east of the cochannel class I stations), there was no indication in that document that the Commission contemplated a complete ban on all new limited-time operations and would confine existing limited-time stations to their present facilities; (3) since the language of section 3.38 relates to *any* substantial modification of facilities of limited-time stations—irrespective of effect on radiation toward the dominant cochannel station—it is unsupported not only by any prior notice but by our September 1959 report and order itself, as well as being far beyond the scope of this proceeding.

27. In our October 1959 supplemental report and order herein (par. 6), we recognized that section 3.38 as adopted in our September report and order was unduly restrictive, and we adopted a new section 3.38. This new section states again that there will be no authorization of new limited-time stations or of modification of limited-time facilities involving change in frequency, move of transmitter site materially closer to the cochannel class I station, or increase in radiation toward such class I station. But it does not bar modification of the existing facilities of limited-time stations in other respects—e.g., move of transmitter site in a direction away from the cochannel class I station or change in radiation pattern decreasing radiation in the direction of that station.<sup>1</sup>

28. The chief difference in mode of operation between class II limited-time stations and class II daytime-only stations is that the former, where located to the east of the dominant cochannel station, are not required to sign off at local sunset but are permitted to operate during the "bonus hours" from local sunset until the hour of sunset at the class I station. Therefore, any restriction on future limited-time authorizations, such as that which is imposed by section 3.38, amounts chiefly to a restriction on "bonus hours." This subject was included in

<sup>1</sup> Some of the petitioners express doubt as to the exact meaning of sec. 3.38 as promulgated in our September report and order; for example, as to whether an existing limited-time station would be permitted to change frequency or make other changes if it went to some basis of operation other than limited time. We believe this possible ambiguity has been cleared up in the new sec. 3.38 as adopted in our supplemental report and order; this section is intended to apply to and impose restrictions on *authorizations of facilities to be operated on a limited-time basis*. Thus, if an existing limited-time station wishes to convert to daytime-only operation, sec. 3.38 would not apply to authorization of changes in its facilities, which would be governed by other applicable rules. Similarly, if an existing limited-time station wishes to change to a frequency of another class, it no longer would be a limited-time station, and sec. 3.38 would not apply. However, if an existing limited-time station wishes to change to another U.S. class I frequency, under the provisions of sec. 3.38 it cannot do so and remain a limited-time station.

our notice of proposed rulemaking issued herein in 1947, since class II operation during these hours involves skywave transmission by these stations during a period when daytime conditions prevail over part, though not all, of the path between the eastern class II and the western class I station—i.e., “daytime skywave transmissions” within the language used in that notice. In any event, the matter of “bonus hours” was specifically raised in our proposed report and order herein adopted in March 1954, in which we proposed (par. 32) to end operation by *all* limited-time stations during these hours by requiring them to sign off at local sunset, regardless of location. This proposal clearly gave all parties notice that we contemplated restriction on “bonus hours,” established a firm basis for the postsunset restrictions on future limited-time authorizations which we have subsequently adopted in section 3.38, as modified in our supplemental report and order, and gave *all* interested parties opportunity to comment on the actions proposed. We have set forth in our September report and Order (par. 23) the reasons why such restriction is in the public interest; we affirm that conclusion.

29. The only other respect in which limited-time operation differs from daytime-only operation (and therefore the only other respect in which sec. 3.38 has possible significance) is that limited-time stations are permitted to operate during nighttime hours which are not used by the dominant station on the channel. (See sec. 3.23(b).) There are only a small number of limited-time stations, and in practice, few of these operate during additional hours on this basis (though two of the petitioners, KJBS and KPOP, enjoy some nighttime operating hours not used by the dominant stations on their frequencies). We do not believe it is in the public interest, or the interest of orderly administration, to maintain for future authorizations a class of station which has no significance other than possible operation during such hours as the dominant station may not operate—hours which are, of course, subject to change at any time as the dominant station may decide to change its operating hours at night. Accordingly, except for those modifications of the facilities of existing limited-time stations which are permitted under section 3.38, we adhere to our conclusion that there should be no new limited-time authorizations of any kind. This rule of course does not apply to operation by existing limited-time stations with their present facilities. Where an existing limited-time station seeks to make changes in its facilities which would be precluded by new section 3.38, and to retain its privilege of operating during nighttime hours not used by the dominant cochannel station, consideration will be given to permitting such operation if it is shown, in a petition for waiver presented in accordance with section 1.307 of our rules, that the public interest would be served thereby.

*Petitions for Stay and for Amendment of Section 1.351*

30. In connection with their petitions for reconsideration, four of the parties representing clear-channel stations (CCBS, Crosley, NBC, and KSL) have requested that the effective date of our September 1959 report and order be deferred until final disposition of their pe-